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MAY 23, 1891 APRIL 11, 1918

TIFFANY & CO.

LEEDS

Philosophical & Literary Society

THE ANNUAL REPORT

For 1880-1.

THE

SIXTY-FIRST REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1880-1.

Read at the Annual Meeting, May 3rd, 1881.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.

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THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers :—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, Conversazione, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures and Conversazione. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, Lectures, and Conversazione, but not to business meetings; nor have they any transferable tickets to admit visitors :—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-FIRST SESSION.

The number of Members and Subscribers has been maintained, being now 664. The subjoined table contains particulars of the numbers in the various classes at the present time, as well as those for last year :—

	1880.	1881.
Original Proprietary Members (78 shares)	72	72
New Proprietary Members (121 shares)	97	99
Ordinary Members	12	11
New Ordinary Members	82	84
Annual Subscribers of £1 1s.	204	202
Annual Subscribers of 7s. 6d.	199	196
Total	666	664

The accounts will show that the amount due to the Treasurer has increased during the year by £47, so that the debt is now £177. An important part of the year's disbursements has been exceptional, it having been found necessary to expend considerable sums in reconstructing the roof of the large zoological room, and in improving the ventilation of the lecture hall. In both these matters the Council have had the valuable and gratuitous assistance of their colleague, Mr. H. P. Holt, M.Inst.C.E., from whose skilled advice very satisfactory results have been obtained. It is believed that the large zoological room, in which so many important collections are placed,

is now in a better condition than has been the case for many years, and the great improvement in the ventilation of the lecture hall must have been evident to those Members who have attended the lectures during the past session.

The following Papers have been read before the Society during the winter :—

1. "Waves of Sound and the Photophone." Prof. Silvanus P. Thompson, D.Sc. *Read Oct. 20th*, 1880.
2. "John Ruskin." Rev. S. Farrington. *Read Nov. 2nd*, 1880.
3. "The Structure and Origin of Meteorites and Meteoric Iron." H. C. Sorby, LL.D., F.R.S. *Read Nov. 16th*, 1880.
4. "The Nutrition of Plants." Dr. Sydney H. Vines, M.A. *Read Dec. 7th*, 1880.
5. "Degeneration." Prof. E. Ray Lankester, F.R.S. *Read Dec 21st*, 1880.
6. "The Present Tendencies of English Literature." Prof. Henry Morley. *Read Jan. 4th*, 1881.
7. "The Last of the Romans." A. H. D. Acland, M.A. *Read Jan. 18th*, 1881.
8. "The Argonauts of '49." Bret Harte. *Read Feb. 1st*, 1881.
9. "The Azores." Prof. T. E. Thorpe, Ph.D., F.R.S. *Read Feb. 15th*, 1881.
10. "Electric Lighting, with Demonstrations." J. W. Swan. *Read March 1st*, 1881.
11. "Irish Bardic Literature." A. P. Graves, M.A. *Read March 15th*, 1881.

The Conversazione on the 30th November possessed quite as many features of interest and was attended by as many persons as usual. Prof. Graham Bell very kindly explained in detail the principles of his new invention, the photophone; and demonstrations with the phonoscope and other instruments were given by various gentlemen. Among the collections, the most important was an exhibition of photographs and photographic

apparatus, illustrating the history of the art of photography. It was thought desirable to extend the opportunity of inspecting this collection, which had been made at considerable cost of labour and money, beyond the evening of the Conversazione, and it was therefore kept on view during the three succeeding days.

The Council have to acknowledge with thanks Mr. T. Emsley's annual donation of £10, and a gift of £10 10s. from Professor Thorpe, F.R.S., the latter donation having for its chief object to supply Mr. Furtado, of St. Michael's, the Azores, who has presented the Society with many valuable specimens, with various drawing and other useful materials, to aid in the prosecution of his studies in natural history.

The visitors to the museum from May 1st, 1880, to April 30th, 1881, numbered 31,266. In the previous year the number was 29,791.

The Curators report as follows :—

The new gallery erected in the large zoological room has provided additional space for the reptiles, amphibia, and fishes, which are now for the first time suitably displayed. The collections were cleaned before replacement, and some new preparations have been added. Part of the Milner collection of British birds now occupies the space in the small zoological room formerly assigned to reptiles and fishes. The remainder of the Milner collection and the Clapham collection of birds of prey fill two sides of the new gallery.

All the insects in the Society's museum have been cleaned and re-arranged, much of the work having, however, been done in the previous year. These

extensive and valuable collections are now in a perfectly sound state. The casts of ivory carvings on the staircase have been carefully cleaned.

The want of a complete catalogue of the Museum has been felt on two or three occasions, when it has been found necessary to trace a missing object, or to ascertain how a particular specimen came into the Society's possession. To remedy this deficiency a systematic manuscript catalogue has been begun, which now includes all the antiquities. The specimens have been numbered in correspondence with the catalogue. It is intended to carry on this work in future years as opportunity offers.

Among the more important donations received during the past year, we have to notice a valuable series of specimens illustrating the natural history of the Azores, and including many land-shells, insects, and spiders. These have been communicated by Mr. F. d'A. Furtado, of St. Michael's, from whom we have reason to expect further donations of the same kind. The peculiar interest of the plants and animals of the Azores lies in the slight deviations from European types which many of the species exhibit, and also in the occurrence of a few forms, such as *Viquesnelia*, now extinct in the Palæarctic region, but which are proved by their distribution as fossils to have formerly ranged over it. A tolerable Azorean collection would be of high interest to English naturalists, and it is proposed to keep the specimens apart for special study.

The other donations (of which a complete list is appended to this report) include examples of two

important desiderata, viz., *Peripatus capensis*, a highly generalised Arthropod, which has attracted much attention since its structure was fully described by Mr. H. N. Moseley (Phil. Trans., 1874, p. 757), and the curious little fresh-water medusa *(Limnocodium Sowerbyi)*, discovered in the *Victoria regia* tank at the Regent's Park. Both of these we owe to the kindness of Professor E. Ray Lankester, F.R.S.

The Raygill exploration, several times noticed in earlier reports, has now been undertaken by the Yorkshire Geological Society. During the past year the work has been energetically carried on, and many bones of mammalia have been brought to light. The specimens are deposited in this Society's Museum. The cave lion and the roebuck are additions to the species identified. A description of the whole series will hereafter appear in the proceedings of the Yorkshire Geological Society.

Mr. Henry Crowther, for the last six years assistant in the Museum, has left the Society's service in order to take a more remunerative situation. The curators desire to record the intelligent and faithful labours of Mr. Crowther in the arrangement and care of the collections, and his readiness on all occasions to further the work of the Society.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year, 1880.

1880.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	38·0 Fah.	30·189	·053
February	44·1 ,,	29·542	1·950
March	43·9 ,,	29·919	2·750
April	46·5 ,,	29·799	2·227
May	51·3 ,,	29·967	2·050
June	54·4 ,,	29·724	2·414
July	59·1 ,,	29·687	4·458
August	62·9 ,,	29·883	1·520
September	61·0 ,,	29·783	3·640
October...	46·3 ,,	29·814	4·360
November	43·4 ,,	29·711	2·360
December	41·9 ,,	29·683	3·873

The mean monthly temperature was 49·4.

The mean monthly height of the barometer was 29·808 inches.

The total rainfall for the year was 31·655 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 106° on August 11th; the greatest in the shade was 84° on September 4th; and minimum 19° on January 28th.

The greatest barometric pressure was on January 7th, being 30·542 inches, the temperature of the mercury being 58°; the least pressure was on November 16th, being 28·420 inches, the temperature of the mercury being 54°.

The greatest fall of rain (during 24 hours) was on October 27th, being 1·560 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1880-1.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1, 1880...				5	1	7
,, Annual Subscriptions, viz.—						
70 New Proprietary Members, at 21/-...	73	10	0			
9 Original Ordinary ditto 42/-...	18	18	0			
51 New Ordinary ditto 21/- ..	53	11	0			
150 Annual Subscribers, at 21/-...	157	10	0			
26 New ditto 21/-...	27	6	0			
138 Annual Subscribers, at 7/6...	51	15	0			
31 New ditto 7/6...	11	12	6			
,, Arrears	24	7	0			
				418	9	6
,, Rent, viz.—						
Cellars	63	0	0			
Lecture Room	214	16	0			
				277	16	0
,, Receipts from Visitors to Museum ...	130	5	6			
,, ,, ,, Conversazione...	34	19	0			
				165	4	6
,, Sale of Catalogues	0	13	6			
,, Sundries	1	6	3			
				1	19	9
,, Donations, viz.—						
,, Mr. T. Emsley	10	0	0			
,, Dr. Thorpe	10	10	0			
				20	10	0
,, Sale of Forfeited Shares				12	0	0
,, Balance due to Bank				177	10	2
				£1078	11	6

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1880				130	19	11
,, Repairs and Alterations	112	8	2			
,, Rates and Taxes	9	12	6			
,, Fire Insurance	15	0	0			
,, Coals, &c.	15	4	8			
,, Gas	14	10	0			
,, Cleaning	6	18	11			
				173	14	3
,, Salaries	371	18	0			
,, Fee to Auditor	2	2	0			
				374	0	0
,, Collections, viz.—						
Archæological	7	2	6			
Zoological	14	16	0			
Library...	23	10	8			
				45	9	2
,, Postages	17	12	7			
,, Advertising and Printing	66	6	5			
,, Lectures	133	1	9			
,, Conversazione Expenses	90	12	8			
,, Collector's Commission	3	0	6			
,, Bankers' Commission...	5	8	0			
,, Sundries	20	5	0			
				336	6	11
,, New Gallery Fittings				18	1	3
				£1078	11	6

June 13th, 1881.

Audited and found correct,

CHAS. BEEVERS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1880-1.

ANTIQUITIES, &c.

Five arrow-heads, a case and five flakes or imperfect implements all in obsidian, from the States of Guerro and Orizona, Mexico	James Backhouse, Esq., York.
Commission to John Derrington, Capt. in the W. Leicestershire Regt. of Loyal Volunteers, 1803	Prof. A. H. Green, M.A.

ZOOLOGY.

Raven Greater Black-backed Gull	F. Darwin, Esq., through T. W Stansfeld, Esq.
Azorean Land-Shells, viz.: Helix armillata, H. paupercula, H. horripila, H. azorica, H. Corbula, H. calderiarum, H. erubescens, Viquesnelia atlantica, Zonites atlanticus, Z. volucella, Z. miguelinus, Z. cellarius, Bulimus vulgaris, B. pruninus, Vitrina brumalis, Physa teneriffæ	Mr. F. d'A. Furtado, Ponta Delgarda, St. Michael's.
Peripatus capensis, and Freshwater Medusa (Limnocodium Sowerbyi)	Prof. E. Ray Lankester, F.R.S.
A collection of Azorean Insects and Spiders	Mr. F. d'A. Furtado.
A collection of Foreign Coleoptera	W. C. Marshall, Esq., London.
A collection of Shells, including Pirena atra, Triton anus, Mitra cardinalis, Trivia pustulata, Ovulum ovum, Cerithium adustum, Potamides fuscatus, Natica melastoma, &c.	Dr. Eddison.
Sundry British Shells from Yorkshire Coast about Bridlington	Mr. G. W. Lamplough, F.G.S., West Parade, Bridlington Quay.
Skeleton of an Eagle, displayed for teaching purposes	Purchased.

GEOLOGY.

Belemnite from the Yorkshire Lias.....	Mr. Josh. Hall, Belle Vue Road, Leeds.
Slab of Flexible Sandstone (20 miles N.W. of Delhi)....	Mr. Wm. Atkinson, Ironmonger, Holbeck Lane.

BOTANY.

A large herbarium of European and other plants, formerly preserved at Nun Appleton	F. J. S. Foljambe, Esq., M.P.

PUBLICATIONS.

The Geology of the Henry Mountains ...	
Catalogue of the Library of the Zoological Society, London.....	The Society.
Great Trigonometrical Survey of India, Vol. V. Details of the Pendulum operations, by Captain J. P. Baseri, R.E., and W, J. Heaviside, R.E., and their Reduction, folio, Calcutta, 1879	Her Majesty's Government Record Department, India Office.
United States Geological Survey of the Territories, Vol. XII. Freshwater Rhizopods of North America; Prof. Joseph Leidy, M.D., folio, Washington, 1879.	Dr. Hayden, United States Geologist, Washington.
Collections of the Minnesota Historical Society, Vol. III. Pt., St. Paul, 1880...	The Society.
The Hennepin Bi-Centenary Account of the Celebration of the Minnesota Historical Society of the two hundredth anniversary of the Discovery of the Falls of St. Anthony, by Louis Hennepin (pamphlet), St. Paul, 1880	
Catalogue of Oriental Coins, Vol. V., by Stanley Lane Poole, London, 1880 ...	British Museum.
Lepidoptera Hetero-cera, Pt. IV., North American Tortricidæ, Lord Walsingham, 1879	
Grace Darling, her true story, London, 1880.....	D. H. Atkinson (the Author).

Address to the Geological Section of the British Association, Swansea, 1880.....	The Author, H. C. Sorby, LL.D., F.R.S., &c.
Do. delivered at the Anniversary Meeting of the Geological Society of London, on the 21st of February, 1879.....	
Do. 20th 1880.....	
Neunzchnter Bericht der Overhessischen Gesellschaft für Natur-und Heilkunde.	
History of North American Pinnipeds. A Monograph of the Walruses, Sea-Lions, Sea-bears, and Seals of North America, by Joel Asaph Allen, Washington, 1880	Dr. Hayden, United States Geologist.
Legenda Sanctorum, Vol. II., Pt. III., Fasciculus II.....	R. Chorley.
Bulletin of the United States Geological and Geographical Survey of the Territories, Vol. V., No. IV. and Vol. VI., No. I.	Dr. Hayden, United States Geologist.
The Rudiments of English Grammar, 3rd edition, London, small 8vo, 1772, by Joseph Priestley, LL.D., F.R.S.....	Priestley Club.
Letters to a Philosophical Unbeliever, part I., 2nd edition, 8vo, Birmingham, 1787, by Joseph Priestley, LL.D., F.R.S.....	
A small whole length of Dr. Priestley, from his published works, London, 1792	
Extracts from Dr. Priestley's Works, read in court at the last Warwick Assizes. Birmingham, 1792.....	
The Present State of Europe compared with Antient Prophecies, a Sermon preached at the Gravel Pit Meeting in Hackney, February 28th, 1794, with a preface containing the reasons for the Author's leaving England, 3rd edition, London, 1794, by Joseph Priestley, LL.D., F.R.S., &c. The three in 1 Vol., 8vo	
Report upon certain Museums for Technology, Science and Art, also upon Scientific, Professional, and Technical Instruction, and Systems of Evening Classes in Great Britain, and on the Continent of Europe, by Prof. Archibald Liversidge, F.C.S., F.G.S., &c., Sydney, 1880.....	A. Liversidge, the University, Sydney, Australia.

Sir Kenelme Digby on "The Nature of Bodies" and "The Nature of Man's Soule," London, 1665, 8vo. Hon. Robert Boyle, F.R.S., on "Some Considerations touching the Usefulnesse of Experimental Naturall Philosophy" ...	Dr. T. C. Allbutt, F.R.S.
"Contributions to the Palæontology of the Yorkshire Oolites," by Wilfred H. Huddleston, M.A., F.G.S. (Pamphlet)	The Author.
Eight Photographs of Geological Sections, &c., issued by the Yorkshire Geological and Polytechnical Society	The Society.

PERIODICALS.

WEEKLY.

Nature.....	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly) ...	Royal Society of Tasmania.
Journal of the Chemical Society.....	Chemical Society.
Monthly Notices of the Royal Astronomical Society.....	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.
Monthly Journal of Science	Purchased.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society...	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland...	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute..	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)..	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh	Royal Society of Edinburgh.
Transactions of do.	
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society.....	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.
Do. do. Lefnadsteckninghar	
Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar.....	
Bihang till Kongliga Vetenskaps Akademiens Handlingar	
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.
Annual Report of the Minnesota Historical Society	
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.

Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History ..... Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club...	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Achæological Society...	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College	The College.
Annual Report of Harvard University ...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Assciation.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.....	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales.....	The Department, New South Wales.
Annual Report of the Sheffield Literary and Philosophical Society	Sheffield Literary and Philosophical Society.

Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collection ... ,, Contributions to Knowledge Report of the Smithsonian Institution ...	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do. (about fortnightly, Oct. to April).....	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Geological Record.....	Purchased.
Proceedings of the Royal Institution (2 pts. a year)	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society
Annual Report of the Leeds Naturalists' Club and Scientific Association	Leeds Naturalists' Club and Scientific Association.
Proceedings of the Yorkshire Geological and Polytechnic Society	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences	Davenport Academy of Natural Sciences, Iowa, U.S.
Report of the Middlesex Hospital	The Hospital.
Calendar and Annual Report of the Yorkshire College	The College.

LIST OF OFFICERS AND COUNCIL,

1881-2.

OFFICERS:

PRESIDENT	REV. JOHN GOTT, D.D.
VICE-PRESIDENTS	REV. J. H. McCHEANE, M.A. J. E. EDDISON, M.D.
TREASURER	HENRY OXLEY.
HONORARY SECRETARIES	RICHARD REYNOLDS, F.C.S. A. W. RÜCKER, M.A.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., M.A., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN	T. E. THORPE, Ph.D., F.R.S.

The above officers, with the following gentlemen, form the

COUNCIL.

E. FILLITER, F.G.S.
H. P. HOLT, F.G.S.
J. HORSFALL, M.A., F.R.C.S.
J. I. IKIN, F.R.C.S.
A. G. LEGARD, M.A.
F. M. LUPTON, M.A.
JOHN MARSHALL, M.A.
W. NICHOLSON PRICE.
JOHN RALPH, M.A.
T. SCATTERGOOD.

General Curator	LOUIS C. MIALL, F.G.S.
Secretary	W. F. HUSBAND, LL.B.
Curator's Assistant	ALFRED DENNY.

LIST OF MEMBERS AND SUBSCRIBERS,

1881-2.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	
4	Arthington, Robert	73, Hunslet Road.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Ribston, near Wetherby.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	York Place.
9	Broadhead, Wm. Henry	9, Victoria Place, Camp Road.
11	*Brown, James	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
17	Clapham, Samuel	Warwick Villas.
19	*Coghlan, William	
21	Cudworth, John W.	43, Mount Preston.
22	Denison, William Beckett	Nun-Appleton, York.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	7, High Street, Hull.

28	Empson, Christopher	Beechwood, Sowerby Bridge.
29	Ford, Mrs.	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares)	Woodsley House.
36-8*	Gott, William Ewart (3 shares)	
61	Greenhow, Thomas Michael, M.D.	Newton Hall.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Avenue House, Woodhouse Lane.
42	Heaton, Beresford Rimington	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	Clarendon Place.
48	Ingham, William	Belmont, Chorley Lane.
49	Jowitt, John	Harehills, Potternewton, near Leeds.
51	Kinnear, Thomas John, M.A.	The Abbey, Malton.
52	Latimer, John	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton	54, North Street.
32	Lupton, Edward Basil	Headingley.
57	Lupton, Francis	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A.	Wellington Street.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
58*	Makins, Charles	
77	Marsh, John Jenks	2, Back Belle Vue Terrace.

59	Marshall, Arthur, F.G.S.	Headingley House.
60	Marshall, Rev. Edmond Henry .	Weetwood Hall.
63	Marshall, Henry Cowper.	Do.
64, 65*	Marshall, J. G., F.G.S. (2 shares) .	
66	Marshall, Reginald Dykes	Cookridge Hall.
67	Marshall, Victor Alexander Ernest, B.A. .	Monk Coniston, Ambleside.
7	North, John .	East Parade.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	Shepherd, John .	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.
50	Taylor, John Charles .	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs. .	St. James's Lodge.
43	Tennant, Robert .	Eastbury, Watford.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	15, Springfield Mount.
76	Ward, William Sykes, F.C.S. .	Denison Hall, Hanover Square.
12	Wilson, Rev. Benjamin .	Bank House, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	2, Albert Avenue, Starbeck, near Harrogate.
32	Atkinson, Edward, F.L.S.	Eldon House, Woodhouse Lane.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A. .	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.

15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5, 6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7*	Buckton, George .	
89	Buckton, Joshua .	West Lea, Meanwood.
8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	Little Morton, East Retford.
90	Butler, J. O. .	The Abbey House, Kirkstall.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
10*	Cliff, Joseph	
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
77	Crofts, John .	41, Mount Preston.
30*	Derham, Mrs. L. E. .	
18*	Donisthorpe, G. E. .	
19	Fairbairn, Sir Andrew, M.A., M.P. .	15, Portman Square, London, W.
20*	Farrer, James	
105	Ferguson, William .	Ridge House, Woodhouse Lane.
21	Filliter, Edward, F.G.S.	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15	*Gott, Wm. Ewart (P) (10 shares) .	
22*	Hall, Thomas .	
23	Hargrave, James .	Willaston House, Harrogate.
16	Harvey, William .	West View, North Hill Road.
24	Henderson, Rev. W. G., D.C.L. .	Grammar School.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	Headingley.
104	Holroyd, James .	

117	Howarth, Edward .	Elmwood House.
36	Hudson, Henry .	Oakwood, Roundhay.
37	Hudson, Robert John .	The Poplars, Woodlesford.
52	Ingham, Charles Alfred .	Belmont, Chorley Lane.
38	Ingham, Henry Constantine .	23, Lyddon Terrace.
120	Ingham, Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhirst, Potternewton.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James .	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorn .	Cardigan House, Headingley.
47	Kitson, James, Jun. .	Spring Bank, Headingley.
48	Kitson, Mrs. .	Burley Hill, Leeds.
50	Leather, J. Towlerton .	Leventhorpe Hall, Swillington.
53	Lupton, Arthur .	Headingley Hill.
95	Lupton, Arthur Greenhow	Wellington Street.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, Darnton .	The Harehills, Roundhay Road.
99, 100	Lupton, Fras. Martineau, M.A. (P) (2 shares) .	Wellington Street.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Road, Headingley.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
59	Margerison, J. L. .	4, Porchester Gate, Bayswater Road, London.
25*	Marsden, H. R. .	
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
62	Marshall, Stephen Albert, B.A. .	Weetwood Hall.
27	Maude, Edmund .	Middleton Lodge, Beeston.
29*	Milner, Henry B. W. .	
64	Nickols, Richard .	Hill Top, Bramley.

65, 66	Nicholson, Albert H. (2 shares) .	
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28	Passavant, P. W. .	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	Mount Pleasant.
93	Ralph, John, M.A. .	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John .	Park Row.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, Edward .	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M. .	
57	Stringer, John William .	Inglebank, Far Headingley.
71*	Taylor, George .	
72	Taylor, Herbert .	
73	Teale, T. Pridgin, M.A., F.R.C.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert (P) .	Eastbury, Watford.
76	Tennant, Thomas .	21, Blenheim Terrace.
78	Tetley, F. W. .	Fox Hill, Weetwood.
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall .	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William .	28, Albion Street.
111	Watson, William Henry.	Horsforth.
97	Weston, Edward .	4, Woodland Grove, New Leeds.
81, 82*	Whitaker, John (2 shares)	
42	Whiting, John .	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William .	St. Mary's Mount, Newton Hill.
85	Wilson, John .	Seacroft Hall.
17	Wilson, Richard .	Commercial Street.

35	Wood, Richard	Newton Villa, Potternewton.
118	Yates, Mortimer Broadley	Clarendon Road.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

2	Atkinson, J. H.	16, East Parade.
4	Bulmer, John	15, Shaw Lane, Headingley.
6	Croft, Samuel	Gledhow.
7	Garlick, William	6, Hyde Terrace.
9	Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A.	Lyddon House, Virginia Road.
35	Armstrong, Prof. G. F., M.A.	24, Hyde Terrace.
2	Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Burley View.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
8	Bolland, W. T.	West Wood Mount, Scarborough.
9*	Botterill, John	
10	Bousfield, Charles Edward	St. Mary's Mount.
11	Briggs, Riley	Springfield Mount.
12	Carbutt, E. H., M.P.	
13	Carter, Robert Meek	Woodhouse Lane.

14	Corson, George	Wood Lane, Headingley.
15	Dawson, Edwin	
16	Denny, T. G.	Victoria Road, Headingley.
19	Eddison, Frederick	The Manor, Adel.
20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
23	Ford, T. B. P.	Bentham, near Lancaster.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
26*	Greenwood, Thomas	
72	Hardcastle, Mrs. R. A.	30, Hyde Terrace.
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Crown Chemical Works, Crown Street.
29	Holt, Henry Percy, C.E., F.G.S.	Fairlea, Headingley.
30	Holt, Joseph (P)	Ogbeare Hall, Holsworthy, Devon.
31	Illingworth, William	Roundhay Grove.
32*	Irwin, Edwin	
33	Irwell, Julius	Highfield House, Headingley.
34	Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
67	Jefferson, Peter	6, De Grey Terrace.
37	Kemplay, Miss	Providence Lodge, Claypit Lane.
86*	Lambert, Joseph	
38	Lawson, Thomas	Potternewton.
39	Lawson, John	The Manor, Bramhope, Otley.
41	Ledgard, Mrs.	Eller Close, Roundhay.
88	Legard, Albert G., M.A.	Grosvenor Terrace, Headingley.
42	Lupton, Joseph	Armley.
44	McCheane, Rev. J. H., M.A.	Trinity Parsonage, Hyde Terrace.
43	Manning, H. J.	
40	Marshall, Prof. John, M.A..	6, Spring Road, Headingley.
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Otley Road, Headingley.

47	Morley, Herbert Ogle	16, Warwick Place.
48	Myers, William Beswick	13, Park Square.
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
58	Peel, Mrs.	Ackworth Park, Pontefract.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Chapeltown Road.
62	Riley, H. W.	King Street.
63*	Robinson, R. H.	
64*	Robinson, Richard	
65	Rücker, Prof. A. W., M.A.	3, Moorland Terrace.
66	Sharpe, Miss	21, Victoria Place, Camp Road.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
69	Smith, John Edward	
70	Somers, Francis	Fountain Terrace.
71	Stables, James	Lane Ends, Horsforth.
74	Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
36	Tennant, John	18, Albion Street.
18	Thornton, Charles	8, Blenheim Terrace.
76	Thorpe, Prof. T. E., Ph.D., F.R.S.	Headingley.
77	Titley, Anthony	Manor House, Victoria Grove, Headingley.
78	Titley, T. A.	Oakley House, Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.
82	Walker, H. B.	Headingley Hill.
83	Ward, Edmund	Denison Hall, Hanover Square.

57 Ward, George, F.C.S.	Buckingham Terrace, Headingley.
90 Ward, William	15, St. John's Terrace.
84*Whiteley, Thomas	
85 Willson, J. J.	Newton Grove.
87*Young, John	

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	Woodhouse Lane.
Almond, Geo. Spedding	Westgate, Dewsbury.
Ambler, T.	9, Park Place.
Appleyard, T. W., jun.	8, De Grey Road.
Armistead, Edwin	Albion Street.
Armistead, J. W.	Rugby House, Meanwood Road.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	Clarendon Road.
Barran, Charles	3, Mount Terrace, Chapel-Allerton.
Barran, John, jun.	St. Mary's Mount, Newton Hill.
Barran, A.	Chapel Allerton Hall.
Barran, Rowland Hirst	Do. do.
Barran, Henry	Do. do.
Bartholomew, W. H., C.E.	Ridge Way House.
Battle, Walter	The Elms, Chapeltown Road.
Battye, R. C.	Newton Grove.
Battye, C.	North Lane, Headingley.
Beverley, Robert	Woodsley Terrace.
Birchall, Oswald	Moor Bank, Ilkley.
Bland, Miss	Lilford House, Queen Square.
Bothamley, C. H.	Yorkshire College.
Braithwaite, Richard Hale	Clarendon Road.
Brigg, Matthew A.	Oak Bank, Headingley.
Brigg, Thomas S.	Do. do.
Brocklehurst, T. P.	High School, Roundhay.
Browne, J. C.	48, Briggate.
Browne, Rev. Provost	Cookridge Street.
Bruce, William	Moorland Terrace.

Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Bulmer, Charles	Blenheim Lodge.
Burnett, F.	30, Mount Preston.
Butler, Edmund	Riseholme, Horsforth.
Butler, Mrs. E.	Hampden Villa, North Hill Road, Headingley Hill.
Calvert, John P.	Bank View, Chapel-Allerton.
Campbell, Archibald	23, Hyde Terrace.
Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Chorley, R.	30, Edwin Road.
Churton, Thomas, M.D.	Park Square.
Clare, W., M.D.	Do.
Clark, Miss	Potternewton Hall.
Clarke, Thos. Robt.	Newton House, Spencer Place, New Leeds.
Clemons, G. H.	1, Grosvenor Mount.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.
Conder, Rev. E. R., M.A.	1, Newton Grove, New Leeds.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Coombe, Rev. A. B., M.A.	H.M. Prison, Leeds.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	67, Sholebroke Avenue, Chapeltown Road.
Crawford, James	Chapel-Allerton.
Crawford, J. W.	Newton Lane.
Croysdale, John	4, Beech Grove Terrace.
Dalton, Thos. Wells	69, Sholebroke Avenue, Chapel town Road.
Davey, Henry	Rupert Lodge, Headingley.
Davis, Edward	Milton Lodge, Far Headingley.
Dawson, C.	
Dawson, William	Larchfield Mills, Hunslet Lane.
Dixon, Henry	6, De Grey Road.
Dobson, Joseph	Burley Lawn.

Douglas, John	The Grange, Seacroft.
Dufton, Arthur Wellesley	74, Springfield Place.
Ellison, James Edward	10, De Grey Road.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Fenwick, Thomas	Allerton Hill, Chapel-Allerton.
Foster, George	Osmondthorpe.
Fraser, John	Grove House, Headingley.
Gane, Lawrence	East Parade.
Gaskell, George V.	Willow House, Chapeltown Road.
Goodall, Charles	Francis Street, New Leeds.
Granger, Charles	Newton Grove, Chapeltown Road.
Greene, John	Whinmoor, near Seacroft.
Hall, Frederick, M.D.	St. Mark's Villas, Woodhouse Lane.
Hall, Rev. G. Walker	34, Springfield Place.
Hall, William	Moor Lane, Headingley.
Hallilay, John	Burley Road.
Hamilton, R. W.	Cardigan Villas, Shaw Lane, Headingley.
Harding, T. W.	St. Ives, Headingley.
Harding, Anthony Robinson	Sefton House, Louis Street, New Leeds.
Hargrove, Rev. C., M.A.	Montpelier Terrace.
Hartnell, Wilson	30, Hyde Park Terrace.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hewetson, H. B.	9, Hanover Square.
Hezmalhalch, Joseph	Thorner.
Hindle, J. E.	North Grange, Horsforth.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Hobson, Frederick	49, Briggate.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Holmes, John	Holmsted, Roundhay.
Horsfield, H. K.	Newton Grove.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Ingham, Frederick	Morris Wood, Kirkstall.

Ingham, Henry	Heaton Lodge, Wortley.
Jackson, Richard	Commercial Street.
Jackson, Miss	15, Eldon Place.
Jefferson, J. S.	15, York Place.
Jefferson, S., F.C.S.	17, Virginia Road.
Jessop, G. W.	Hall Royd, Shipley.
Jessop, T. R., F.R.C.S.	32, Park Square.
Josephy, Henry	Cookridge Street.
Jowitt, Miss	Woodfield, Newton Hill.
Joy, A. B.	Addingham, Ilkley.
Joy, W. Lomas	Weetwood Mount.
Kettlewell, C. B.	38, Commercial Street.
Kirk, James	Killingbeck Hall.
Knott, Joseph	Aire and Calder Navigation Co., Dock Street.
Lambert, William	Oakfield, Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove Hall.
Lawson, F. W.	Hillary Lodge, Cavendish Road.
Lee, W.	45, Francis Street, New Leeds.
Leprince, A.	Park Square.
Lupton, Henry	The Elms, Chapel-Allerton.
Lupton, William W.	Newton Hill.
Mathers, John S.	Hanover House.
Matterson, Miss	Cavendish House, Cavendish Road.
Maude, Miss	Knowsthorpe House.
Megson, J. C.	Spencer Place, New Leeds.
Meredith, S. R.	14, Park Place.
Meyer, Adolf	2, Brandon Villas, Chapeltown Road.
Middleton, William	Gledhow Grange.
Middleton, William	Acacia, Roundhay.
Milne, S. Milne	Calverley House, Calverley.
Motley, Francis	Mount Pleasant.
Moxon, John	Spencer Terrace, Louis Street, New Leeds.
Naylor, C. T.	Newton Lodge, Potternewton.
Naylor, G. F.	Bond Street, Wakefield.

Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Burley Road.
Newstead, J. S.	Woodville, Horsforth.
Nichols, J. H.	Woodsley Lodge, St. John's Hill.
Pawson, A. H.	Lawns House, Farnley, near Leeds.
Pawson, John Edward	Do. Do.
Pearson, John Thomas	Moor House, Far Headingley.
Pepper, J. E.	23, Mount Preston.
Pickering, John	Mount Preston.
Pickles, J. J.	68, Camp Road.
Pope, Edward	Farfield, Moor-Allerton.
Powell, William	13, Park Place.
Powell, William	Springfield Villa.
Ransome, Prof. Cyril, M.A.	Ash Grove, Victoria Road.
Reffitt, J. W.	5, Victoria Terrace, Belle Vue Road.
Reid, T. Wemyss	Leeds.
Rhodes, John H.	27, Park Square.
Richardson, J. N.	The Woodlands, Weetwood.
Rider, James	Pease's Buildings.
Robinson, Thomas	The Manor House, Farnley.
Robinson, Edmund	42, Park Square.
Robson, A. W. M.	Hillary Place.
Rooke, Charles S.	Newton Hill, Potternewton.
Rooke, R. L.	Do.
Rowe, Rev. A. W. S. A., B.A.	149, Belle Vue Road.
Rowley, Walter, F.G.S.	Meanwood.
Ryder, Charles	Westfield, Chapeltown.
Scatcherd, Oliver	Virginia Road.
Shackleton, Joseph	West House, New Wortley.
Shaw, Mrs.	St. Mark's Villa.
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Walker, George	Do.
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Smeeton, Mrs. W.	Commercial Street.
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Spark, Miss	Do. do.
Stables, Mrs. H.	Horsforth.
Stables, Miss	Do.
Stables, Miss Lucy	Do.
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APPENDIX.

THE following notices of the rarer Birds in the Milner Collection are mainly drawn up from the notes of the late Sir William M. E. Milner, whose remarks, when quoted verbatim, are indicated by inverted commas. The numerals correspond with those affixed to the cases. G. indicates that the specimen was set up by Graham, of York.

The Curators have received valuable assistance in identifying particular birds from Mr. James Wright, of Rawcliffe Hall, Selby, to whom the Milner Collection was intimately known, in consequence of a residence for 21 years at Nun Appleton.

GRIFFON VULTURE (*Gyps fulvus*).—A Swiss specimen. (27)

EGYPTIAN VULTURE (*Neophron percnopterus*).—Male. No information, except that it was procured in London. (31)

GOLDEN EAGLE (*Aquila chrysaëtus*).—"Male and female. 1849. Ben More, Assynt." G. (2) "Killed near Nun Appleton."

SPOTTED EAGLE (*Aquila nævia*).—"Shot in Aberdeenshire, September 20, 1861, by the present Speaker of the House of Commons, F. E. Denison, Esq." G. (11)

OSPREY (*Pandion haliaëtus*).—"Killed at Nun Appleton." (1)

WHITE-TAILED EAGLE, OR ERNE (*Haliaëtus albicilla*).—"Male and female. 1850. Ben More, Assynt, Sutherlandshire." G. (9) Young bird. Fawley Park, Henley-on-Thames. (7?) Immature. "Killed by F. Foljambe, Esq., on the Inverpoley Farm, in Cogach, 10 miles south of the Sugar-loaf Mountain, April 22, 1851." (6?)

ICELAND FALCON (*Falco islandicus*).—(3)

GREENLAND FALCON (*Falco grœlandicus*).—Procured in Iceland by the late H. B. Milner, 1846. (14)

PEREGRINE FALCON (*Falco peregrinus*).—"Shot at Nun Appleton. Fine female. (5) "Shot at Osberton." (8?)

HOBBY (*Falco subbuteo*).—"Very rare in Yorkshire. The one in my collection killed at Nun Appleton." (4)

MERLIN (*Falco æsalon*).—Nun Appleton. (15)

RED-FOOTED FALCON (*Falco rufipes*).—"Young bird taken alive on a vessel in the Thames, 1851. Fine pair bought at Reid's." (8)

GOS-HAWK (*Astur palumbarius*).—"Fine pair of Goshawks, killed in Yorkshire." G. (10)

KITE (*Milvus vulgaris*).—Nun Appleton. (17)

SWALLOW-TAILED KITE (*Nauclerus furcatus*).—"Presented by Thomas Walker, Esq., Ravenfield." No note of place or time of capture. (16)

ROUGH-LEGGED BUZZARD (*Buteo lagopus*).—"Pair killed at Osberton, Notts." (21)

HONEY BUZZARD (*Pernis apivorus*).—"Fine specimens, all killed in England, from Reid, Doncaster." (20)

MARSH HARRIER (*Circus æruginosus*).—"Young, killed at Wassand, 1850." (18, 24)

HEN HARRIER (*Circus cyaneus*).—"Fine female, Sutherland." (25)

MONTAGU'S HARRIER (*Circus cineraceus*).—"A fine pair, killed in Yorkshire, stuffed by Reid." (23)

An example, in dark-brown plumage. (19)

HAWK OWL (*Surnia ulula*).—"Gift of T. H. Preston, Esq., Canada." (35)

SNOWY OWL (*Surnia nyctea*).—"A very fine specimen of this bird was killed by John McKenzie at Altenharrow, Sutherlandshire, in October, 1853, and is in my collection. I quote his own words:—'The Snowy Owl is the only one of the kind that ever was seen here. I shot it about the middle of October last year, sitting on the top of a rock on Knock Stack.'" (33)

LITTLE OWL (*Athene noctua*).—"Bought in London." (33)

SPARROW, OR ACADIAN OWL (*Strix Acadica*).—This is reputed a Yorkshire specimen, but not on conclusive testimony. (33)

EAGLE OWL (*Bubo maximus*).—"Bred at Wentworth Park, very fine female." (30)

GREAT GREY SHRIKE (*Lanius excubitor*).—"Fine female, shot near the bar walls, York, in the winter of 1851-2."

WHITE-BELLIED SWIFT (*Cypselus melba*).—A Swiss specimen.

PURPLE SWALLOW (*Progne purpurea*).—An American example.

THRUSH-LIKE WARBLER (*Salicaria turdoides*).—From Paris.

SAVI'S WARBLER (*Calamodyta luscinioides*).—From Backbite Sluice, Cambridge. "Nest taken in the sicklepit wood, at Nun Appleton, 1865 or 1866. Egg taken, birds hatched and identified by Mr. Graham, of York."

ORPHEAN WARBLER (*Sylvia orphea*).—This bird, "an adult female, shot in the summer of 1849, in a small plantation near Wetherby, and from the state of the breast, appeared to have been lately engaged in incubation. The male bird was observed, but was not secured."

See notice by Sir W. Milner in the "Zoologist," p. 2588, and Yarrell's British Birds, 4th ed., vol. i., p. 423.

CRESTED TIT (*Parus cristatus*).—Strathspey.

BEARDED TIT (*Parus biarmicus*).—From Backbite Sluice, Cambridge.

WHITE WAGTAIL (*Motacilla alba*).—Brought from Iceland by H. B. Milner, in 1846.

RICHARD'S PIPIT (*Anthus Richardii*).—Bought in London.

BOHEMIAN WAXWING (*Ampelis garrulus*).—"A pair of these birds in my collection, shot close to York. The same winter a great many specimens were obtained in the same locality, since which time they have entirely disappeared."

ROSE-COLOURED PASTOR (*Pastor roseus*).—"Killed on the walls of York, near St. Mary's Abbey, and procured for me by Graham." G.

ORTOLAN BUNTING (*Emberiza hortulana*).—Killed near York. G.

SHORE LARK (*Otocoris alpestris*).—Bridlington, 1853. From Mr. Allis.

CROSSBILL (*Laxia curvirostra*).—Killed on the walls of York. G.

WHITEWINGED CROSSBILL (*Loxia bifasciata*).—"Three pairs of these birds were shot in Cowick Park, near Snaith, one pair of which is in my collection. There were at that time several more seen, but no other one killed. My birds vary from the American Whitewinged Crossbill in being a rather larger bird, in having the beak stronger and thicker, and the two bars on the wing much more distinct and strongly marked."

TURTLE DOVE (*Turtur auritus*).—New Forest.

RED-LEGGED PARTRIDGE (*Caccabis rufa*).—"Killed at Nun Appleton, November, 1854."

CREAM-COLOURED COURSER (*Cursorius isabellinus*).—A pair from Tangier.

COMMON BITTERN (*Botaurus stellaris*).—"A fine young male, shot at Hornsea Mere, February 6, 1854."

WHITE SPOONBILL (*Platalea leucorodia*).—"A fine old female was killed in a pond at Wilberfoss, near Pocklington, Yorkshire, on the 2nd of August, 1851, and was brought to Mr. Graham, York, when scarcely cold. It is now in my collection."

WHITE STORK (*Ciconia alba*).—"A very fine specimen of this bird, a male, was shot near Riccall, about nine miles from York, and came the same day into the hands of my bird-stuffer, Mr. Graham, on the 18th of May, 1848."

REDSHANK (*Totanus calidris*).—"Old male and chick of the year. Shot by J. Wolley, Esq., in Lapland. Summer of 1853. Purchased at his sale, 1854."

WOOD SANDPIPER (*Totanus glareola*).—"A fine specimen in my collection, killed at Hornsea Mere, by C. W. Strickland, Esq."

SPOTTED SANDPIPER (*Tringoides macularia*).—"A beautiful adult female of this rare bird, was killed by a sailor on the beach at Whitby, on Thursday, March 28th, 1849. It came to my bird-stuffer, Mr. Graham, in the flesh the following day."

GREENSHANK (*Totanus glottis*).—Sutherlandshire.

KNOT (*Tringa canutus*).—"Fine specimens in the deep red plumage, obtained by H. B. Milner, Esq., in Iceland, 1846."

PURPLE SANDPIPER (*Tringa maritima*).—Iceland.

SANDERLING (*Caldris arenaria*).—"Very common in Iceland. Bird in summer plumage, brought over by H. B. Milner, 1846."

RUSSET SNIPE (*Scolopax Montagui*).—Shot by Sir W. M. E. Milner, at Nun Appleton, being the second specimen seen in England.

BARTRAM'S SANDPIPER (*Totanus Bartramii*).—"A fine specimen of *Tringa Bartramii* (Bartram's Sandpiper) was presented to me by John Gould, Esq., which was shot in some fens 16 miles from Cambridge, 16th September, 1856."

RED-NECKED PHALAROPE (*Phalaropus hyperboreus*).—Balronald. "Another fine male was killed at Wilberfoss, near York, on June 2, 1854."

PINK-FOOTED GOOSE (*Anser brachyrhynchus*).—"My specimen of this Goose was killed at Haxby, near York, January 15, 1850, out of a flock of six."

BEWICK'S SWAN (*Cygnus minor*).—"A very fine specimen of this bird was killed on Hornsea Mere, and is now in my collection."

WESTERN DUCK (*Clangula Stelleri*).—Bought in Dresden.

GOOSANDER (*Mergus Castor*).—"A great many of these birds in the north of England, especially Nottinghamshire, in winter of 1854-55. A fine male, killed by Lord Galway out of a flock of 25, February, 1855, at Scalby, near Bawtry, and now in my collection."

SMEW (*Mergellus albellus*).—"A pair of these beautiful birds were shot on Hornsea Mere in full summer plumage, and are now in my collection."

BLACK-THROATED DIVER (*Colymbus arcticus*).—Loch Assynt.

SCLAVONIAN GREBE (*Podiceps cornutus*).—Iceland.

GREAT CRESTED GREBE (*Podiceps cristatus*).—"Breeds in some numbers on Hornsea Mere, whence I have birds and eggs."

EARED GREBE (*Podiceps auritus*).—"A good specimen of this bird killed at Nun Appleton, by Mr. Wright."

GREAT AUK (*Alca impennis*).—Orkney. Bought in 1856 from the Rev. R. Buddicom, of Smethcote, Shrewsbury, for £28.

LITTLE AUK (*Arctica alle*).—Iceland.

GREATER SHEARWATER (*Puffinus major*).—Robin Hood's Bay, near Whitby.

DUSHY SHEARWATER (*Puffinus obscurus*).—Adult and young. Madeira, 1853.

BULWER'S PETREL (*Thalassidroma Bulweri*).—Madeira.

FORKED-TAILED PETREL (*Thalassidroma Leachii*).—St. Kilda, 1847.

WILSON'S PETREL (*Thalassidroma oceanica*).—Bought in Paris.

FULMAR PETREL (*Procellaria glacialis*).—St. Kilda.

POMARINE SKUA (*Stercorarius Pomarinus*).—"Fine adult male, brought home by Mr. Hope, of York, Ship's-surgeon, from the Arctic Regions, in my collection."

RICHARDSON'S SKUA (*Stercorarius Richardsoni*).—North Uist, 1847.

BUFFON'S SKUA (*Stercorarius Buffonii*).—"Fine specimen of this bird, killed near Bonar Bridge, Sutherlandshire, in winter of 1846-47."

CUNEATE-TAILED GULL (*Larus Rossii*).—Killed by Lord Howden's gamekeeper, at Grimston, near Tadcaster, in a ploughed-field, in January, 1847, and purchased of D. Graham, naturalist, York."

GLAUCOUS GULL (*Larus glaucus*).—Iceland.

ICELAND GULL (*Larus leucopterus*).—Iceland.

BLACK-HEADED GULL (*Larus ridibundus*).—Hornsea Mere, Yorkshire. Loch Ness, Thurso, N.B.

BONAPARTE'S GULL (*Larus Bonapartii*).—America.

LITTLE GULL (*Larus minutus*).—"Young bird killed at Burlington Quay, 1850." G.

SABINE'S GULL (*Larus Sabini*).—"I received a pair of this extremely rare bird from Lapland, in 1854, in the height of summer plumage."

GANNET (*Sula bassana*).—"A fine young bird was killed at Nun Appleton, and is in my collection."

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Philosophical & Literary Society

THE ANNUAL REPORT

For 1881-2.

Se Le 1

THE

SIXTY-SECOND REPORT

OF

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OF THE

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PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1881-2.

Read at the Annual Meeting, May 2nd, 1882.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.

MDCCCLXXXII.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers :—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, Conversazione, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures and Conversazione. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, Lectures, and Conversazione, but not to business meetings; nor have they any transferable tickets to admit visitors :—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-SECOND SESSION.

The past year has been one of considerable activity. Improvements have been effected in the arrangement of collections and books in the Museum and Library, and the meetings of the Society have proved of more than usual interest, and have been well attended.

The present numbers compare with those of last year as follows :—

	1881.	1882.
Original Proprietary Members (78 shares)	72	72
New Proprietary Members (121 shares)	99	98
Ordinary Members	11	8
New Ordinary Members	84	87
Annual Subscribers of £1 1s.	202	193
Annual Subscribers of 7s. 6d	196	186
Total	664	644

The income of the Society has been about the same as that of the preceding year; a slight decrease in the receipts for rent of the Lecture Hall and from visitors to the Museum being compensated for by an increase in the subscriptions collected and in other items of revenue. In addition to the annual donation of £10 from Mr. T. Emsley, of Burley-in-Wharfedale, with which the Society has been assisted for some years, the financial account comprises a donation of £5 from Mr. James Bedford, of Woodhouse Cliff, for the purchase of specimens for the

Museum referred to in a subsequent part of this report. On the other hand, while the ordinary expenditure has been reduced below an average amount, the disbursements for the year have been augmented by the cost of necessary external repairs to the roof of the building, and of the internal fittings and renovations in the Lecture Hall. The net result is to leave the Society £220 in debt, being £42 more than the deficiency in the last account.

At the General Meetings of the Society the following Papers have been read :—

1. "The Art of Engraving." Rev. John Gott, D.D., President. *Read October 18th*, 1881.
2. "Lakes, and their Natural History." Prof. P. Martin Duncan, M.B., F.R S. *Read November 8th*, 1881.
3. "The Great Comet of 1881." Prof. R. S. Ball, M.A., LL.D., F.R.S , Astronomer Royal for Ireland. *Read Nov. 15th*, 1881.
4. "The Art of Popular Illustration." Henry Blackburn, Editor of "Academy Notes." *Read December 6th*, 1881.
5. "Raphael and Rembrandt, a Comparison." Prof. Sidney Colvin, M.A. *Read December 20th*, 1881.
6. "The Value of India to England." Sir Richard Temple, G.C.S.I., F.R.G.S. *Read January 17th*, 1882.
7. "George Eliot—Author and Woman." T. Wemyss Reid. *Read January 24th*, 1882.
8. "Colliery Explosions." W. Galloway. *Read February 7th*, 1882.
9. "Electric Railways." Prof. W. E. Ayrton, F.R.S. *Read Feby. 21st*, 1882.
10. "A Scholar's Life in the Fifteenth Century." Rev. M. Creighton, M.A. *Read March 7th*, 1882.
11. "Indigo and its Artificial Preparation." Prof. H. E. Roscoe, Ph.D., LL.D., F.R.S. *Read March 21st*, 1882.
12. "The Early History of the Earth." Prof. A. W. Rücker, M.A. *Read April 4th*, 1882.

The chief feature of the Conversazione, on the 22nd November, 1881, was a collection of artistic metal work,

contributed by the South Kensington Museum; the Clothworkers' Company, London; Messrs. Skidmore and Co., Coventry; Mr. T. Elsley and Mr. Shrivell, of London; Messrs. Pearce and Co., Leeds; the Industrial Art School of Nuremberg; Messrs. Elkington and Co., Birmingham; and other gentlemen. An interesting series of admirable photographs of Norway, by Mr. F. W. Fison, M.A., of Ilkley, were exhibited by that gentleman with the oxy-hydrogen lantern.

The number of persons who paid for admission to the Museum during the year was 3,179 less than last year, viz., 28,087.

The Museum has received some important donations during the past year. The Geological Collection has acquired a set of fossil corals from the Carboniferous Limestone of Lough Erne, presented by the Earl of Enniskillen; a set of electrotype casts of Labyrinthodonts from the Coal Measures of Bohemia, prepared by Dr. Anton Fritsch, of Prague, and presented by Mr. James Bedford; and, lastly, a fine collection, chiefly of fossil fishes from the Carboniferous rocks of Airdrie and Eskdale, for which we are indebted to Mr. Thomas Stock, of the Museum of Science and Art, Edinburgh. These acquisitions are of special value to our Museum, inasmuch as they enrich our fine collection of Carboniferous fossils, which, in a Carboniferous district, is naturally of pre-eminent interest. Mr. Furtado, of St. Michael's, has sent us further contributions to the natural history of the Azores, of which the most important is a collection of fossils from Santa Maria, and some post-tertiary fossil plants from St. Michael's. The Society has endeavoured to assist Mr. Furtado's studies, by sending out to him a

dissecting microscope, purchased out of the fund placed at the disposal of the Council by Dr. Thorpe (see Report for 1880-1). Two papers of considerable interest, written by Mr. Furtado, have been received for publication in England. Two of these have appeared in the Annals of Natural History, viz., "On Viquesnelia Atlantica" (5th series, vol. vii., no. 39), and "On a case of complete atrophy of the reproductive organs of Vitrina," (5th series, vol. ix., no. 53). Mr. W. J. Brown, of Ackworth, has contributed a number of interesting minerals and natural history specimens collected in New Zealand, which include fine examples of the curious fungus, *Torrubia Robertsii*, growing upon the caterpillar of *Hepialus virescens*. The Ethnological Department is enriched by a large and valuable series of weapons, implements, dresses, and ornaments (chiefly Polynesian), collected by the late Mr. H. W. Eyres during a voyage round the world, and presented by his widow, Mrs. Eyres, of London. A prominent place in the vestibule has been assigned to this important donation, which is, by express stipulation, kept as a distinct collection. Mr. Joseph Whitley has presented a beautifully executed bronze model of Cleopatra's Needle, with stand and glazed frame. The model, which is on a scale of $\frac{1}{24}$ of the original, was made in Leeds by the firm of Whitley Partners, and merits attention as an example of modern skill in metal-work, no less than as a monument of remote history. The Farnley Iron Company has sent a fine pair of Millstones of unusual form, found at Farnley Moor Top, and probably of the 17th century. A collection of 22 types of recent Brachiopoda has been purchased from Mr. Damon, of Weymouth.

In the Annual Report for 1863-4 notice was taken of additions to the Museum from Dowkerbottom Cave, then being explored by Mr. James Farrar, of Ingleborough House, and Mr. Denny. It will be of interest to the members of the Society to learn that a systematic re-examination of the cave has been undertaken by Mr. E. B. Poulton, of Oxford, who, with a party of friends, spent the last long vacation upon the work. The Council of this Society endeavoured to promote the exploration in various ways, and their successors will doubtless continue to assist Mr. Poulton whenever possible. It is stipulated that objects found in the cave shall not be finally removed from the county.

The Mammalia have been cleaned and re-arranged, and the inside of the cases has been painted with oil-colour, instead of the distemper previously used. It is hoped that this change will do something to lessen the great amount of dust which has hitherto lodged upon the specimens. The velvet on the doors has been renewed with the same object. The Minerals and the table-cases of Pleistocene Mammalia have been cleaned and re-arranged, and the cases painted inside with oil. Three large upright cases, lately standing in the Mammalian room, which were purchased in 1876 out of a fund raised by Mr. Ikin, then President, have been turned to account for the enlargement of our exhibition-space. Two of them have been removed to the Vestibule, where they now contain a great part of the Eyres Collection. The third has been broken up, and converted into five useful table-cases, which are about to receive collections illustrative of the life-history of Birds and Insects. The centre of the large Zoological Room has been re-arranged in conse-

quence of these changes, and it will be found that increased room for passages has been gained, while the appearance of the room is materially improved. The cases in the Milner collection of British birds have been re-lettered, and printed labels, guarded by slips of glass, now give the names of the birds in each case. A number of the slabs with Greek inscriptions have been fixed to the walls, in order to economise space in the Vestibule. The safety of these valuable objects is thereby increased, and they are rendered somewhat more easy of access.

The manuscript catalogue of the Museum has been extended to the Mineral collection, and the specimens have been numbered in accordance.

The books in the Library have been cleaned, re-arranged, and compared with the catalogue. It has been found necessary to place the bound serials in double rows upon the shelves, in order to gain room for continual additions. It is believed that the new arrangement of the books according to subject will render it easier to find any book that may be wanted, or to run over all the books relating to any one branch of knowledge. A new catalogue has been prepared, and will shortly be printed.

The interior of the building has been re-coloured and in part re-painted during the year. A new diagram-screen and a lantern-screen have been fixed in the Lecture Theatre.

The Council feel it to be their duty to call the attention of their successors to the condition of the heating apparatus. Investigation has shown that the boiler must be replaced, and this will doubtless afford the opportunity for giving greater efficiency than has been attained by the present system of warming the building.

Mr. D'A. Furtado, of St. Michael's, Azores, to whom the Society is indebted for its collection of specimens illustrative of the natural history of those islands, has been elected an Honorary Member.

The year has added another honoured name to the death-roll of the Society. The Rev. J. H. McCheane, M.A., had been a Member of the Council from 1869, a Vice-President in 1874 and 1875, and again from 1878 to the time of his death, and President in 1876 and 1877. He filled the position of President with conspicuous ability and success, and in every office his cultured mind and genial manner were devoted with characteristic earnestness to the interests of the Society, greatly to its advantage.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1881.

1881.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	32·0 Fah.	29·795	·615
February	37·9 ,,	29·645	3·585
March	40·6 ,,	29·702	3·866
April	44·4 ,,	29·833	1·390
May	55·3 ,,	29·875	1·330
June	57·6 ,,	29·795	1·656
July	62·9 ,,	29·774	2·150
August	57·8 ,,	29·598	3·708
September	54·7 ,,	29·819	2·221
October...	46·9 ,,	29·850	2·649
November	48·5 ,,	29·379	3·295
December	40·6 ,,	29·736	2·146

The mean monthly temperature was 48·3.

The mean monthly height of the barometer was 29·733 inches.

The total rainfall for the year was 28·601 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 110° on May 31st; the greatest in the shade was 87° on July 5th; and the minimum 12° on January 26th.

The greatest barometric pressure was on January 7th, being 30·586 inches, the temperature of the mercury being 49°; the least pressure was on October 14th, being 28·450 inches, the temperature of the mercury being 58°.

The greatest fall of rain (during 24 hours) was on February 14th, being 1·370 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1881-2.

RECEIPTS.	£	s.	d.	£	s.	d.
To Annual Subscriptions, viz.—						
84 New Proprietary Members, at 21/-...	88	4	0			
8 Original Ordinary ditto 42/-...	16	16	0			
66 New Ordinary ditto 21/- ..	69	6	0			
136 Annual Subscribers, at 21/-...	142	16	0			
22 New ditto 21/-...	23	2	0			
132 Annual Subscribers, at 7/6...	49	10	0			
31 New ditto 7/6...	11	12	6			
,, Arrears	60	6	0			
				461	12	6
,, Rent, viz.—						
Cellars	63	0	0			
Lecture Room	190	1	0			
				253	1	0
,, Receipts from Visitors to Museum ...	117	0	7			
,, ,, ,, Conversazione...	34	6	0			
				151	6	7
,, Sale of Catalogues	0	17	3			
,, Sundries	2	10	10			
				3	8	1
,, Donations, viz.—						
,, Mr. T. Emsley	10	0	0			
,, Mr. J. Bedford	5	0	0			
				15	0	0
,, Sale of Forfeited Shares				24	0	0
,, Balance due to Bank				219	13	5
				£1128	1	7

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1881				177	10	2
,, Repairs and Alterations	168	14	4			
,, Rates and Taxes	3	2	5			
,, Fire Insurance	15	0	0			
,, Coals, &c.	13	2	6			
,, Gas	17	14	4			
,, Cleaning	7	6	6			
				225	0	1
,, Salaries	357	0	0			
,, Fee to Auditor	2	2	0			
				359	2	0
,, Collections, viz.—						
Geological	1	10	1			
Zoological	33	6	0			
Library...	21	17	1			
				56	13	2
,, Postages	17	2	9			
,, Advertising and Printing	59	17	10			
,, Lectures	92	0	3			
,, Conversazione Expenses	72	19	4			
,, Collector's Commission	8	18	10			
,, Bankers' Commission...	7	8	0			
,, Sundries	23	5	9			
				281	12	9
,, Furniture				27	4	8
,, Balance in hand	0	12	3			
,, ,, Petty Cash	0	6	6			
				0	18	9
				£1128	1	7

June 10th, 1882.

Audited and found correct,

CHAS. BEEVERS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1881-2.

ANTIQUITIES, &c.

Letter of confraternity with the Friars Minor of Preston, A.D. 1479	Deposited by Rev. T. Millville Raven.
A pair of ancient Millstones, found at Farnley Moor Top, 1882	Mr. C. Sheard, Colliery Manager, Farnley Iron Company.
The lower Millstone of a large pair (grooved), dug up in The Square, Masham, 1881	Mr. John Jackson, Masham.
Medal of Joseph Priestley, 1783	Miss S. Cogan, 39, Shore Road, Hackney, E.
Map of Hull, by A. Bower, 1786 Map of Port Natal, 1848	Dr. Eddison.
Model of Cleopatra's Needle, in bronze (scale $\frac{1}{24}$th of the original)	Joseph Whitley, Esq.
Old Printing Press	Mr. George Pallister.

ZOOLOGY.

Skull of Gavial	John Kirby, Esq., Stourton Villas, Wakefield Road
Specimens of Eggs of Python (Singapore), Alligator (Labuan), Sterna fuliginosa (Ascension), and nine bird - skins (Labuan)	Lieut. T. Barrington Moody, R.N., The Limes, Clapham Common, London.
Collection of 22 types of recent Brachiopoda, from Mr. Damon, of Weymouth	Purchased.

GEOLOGY.

A collection of fossil Corals from Lough Erne	The Earl of Enniskillen.

A collection of fossils from the Carboniferous Rocks of Airdrie and Eskdale—including Cosmoptychius striatus, Nematoptychius Greenockii, Acanthodes, Eurynotus, Holurus, Eoscarpius, &c.	T. Stock, Esq., Edinburgh.
Sulphur, from the volcano of White Island, Coast of New Zealand.....	W. J. Brown, Esq.
Syringopora, dug up in drain in Kirkstall Road, Leeds	Mr. John Stockwell.
Collection of fossils from Santa Maria, and some post-tertiary fossil plants from St. Michael's, Azores..... ..	Mr. F. d'A. Furtado, St. Michael's.
Set of electrotype casts of Labyrinthodonts from the Coal Measures of Bohemia, prepared by Dr. Anton Fritsch, of Prague.....	James Bedford, Esq.

BOTANY.

Examples of Torrubia Robertsii, growing upon caterpillars of Hepialus virescens, from New Zealand	W. J. Brown, Esq., Ackworth, near Pontefract.

TECHNOLOGY.

Kauri Gum, found in the Sulphur Springs at Ohaiwa, Auckland..... Kauri Gum, from Hokianga	W. J. Brown, Esq., Ackworth, near Pontefract.

ETHNOLOGY.

A collection of Weapons, Implements, Dresses and Ornaments (chiefly Polynesian) collected by the late Mr. H. W. Eyres	Mrs. H. W. Eyres, London.
War Drum from Apollonia, West Coast of Africa, hung with Fantee skulls ...	O. Pegler, Esq.

PUBLICATIONS.

Catalogue of Birds, Vol. V., by Henry Seebohm, 1880	The Trustees of the British Museum.
Catalogue of Birds, Vol. VI., by R. B. Sharpe, 1881	
Catalogue of Oriental Coins, Vol. VI., by S. Lane Poole, 1881	
Catalogue of Lepidoptera Heterocera, Vol. V., by A. Gardner Butler	
Catalogue of additions to the Manuscripts, by E. Maunde Thompson, 1880	
Catalogue of Spanish Manuscripts in the British Museum, Vol. III., by P. de Gayangos	
Catalogue of Batrachia Salientia, by George Albert Boulanger, 1882	
Fauna der Gaskohle, by Dr. Anton Fritsch, Part III.	Purchased.
A Handbook of the Yorkshire Vertebrata, by W. E. Clarke and W. D. Roebuck..	Purchased.
Great Trigonometrical Survey of India, Vol. VI., 1880	Her Majesty's Government, Record Department, India Office.
Greewich Observations, 1879	Astronomer Royal.
The Cape Catalogue of Stars, 1840	
Upon the Production of Sound by Radiant Energy, by Prof. Graham Bell, 8vo., Washington, 1881.....	The Author.
Visitor's Guide to Salem, 8vo, Salem, Mass: 1880	Essex Institute.
Memorial of Joseph Henry, 8vo, Washington, 1880	Smithsonian Institution.
Account of Observations of Transit of Venus in 1874, by Sir G. B. Airy	Her Majesty's Government.
The English Flora, 4 vols.—London, 1826, by Sir J. E. Smith	Dr. Eddison.
The English Flora, of Sir J. E. Smith, Vol. V.—London, 1836, by Sir W. J. Hooker	
Experiments and Observations concerning Agriculture and the Weather, by Marshall	
Lectures on Agricultural Chemistry and Geology—London, 1842, by J. F. W. Johnston.....	

General View of the Agriculture of the County of Somerset—Bath, 1797, by J. Billingsley .....
The Farmer's Instructor—London, 1747, by William Ellis .....
Horse-Hoeing Husbandry, or an Essay on the Principles of Vegetation and Tillage—London, 1751, by G. Tull ...
The Art of Husbandry, or the way of Managing and Improving Land .....
A Manual of Comparative Anatomy, translated from the German of Blumenbach, by William Lawrence, F.R.S. ...
Historia Insectorum Generalis, 1693, by J. Swammerdam .....
Report on the Atmospheric Railway System—London, 1844, by R. Stephenson .....
Transactions of the Illinois Natural History Society, Vol I., by C. D. Wilber...
The Theory and Practice of Drill Husbandry—London, 1802, by William Amos .....
The Practical Norfolk Farmer—Norwich, 1813 .....
The Extensive Practice of the New Husbandry—London, 1786, by Forbes
Rural Improvements, or Essays on the most Rational Methods of Improving Estates—London, 1775 .....
Elements of Agriculture; an Essay on the Cultivation of the Soil—London, 1807, by John Naismith .....
General View of the Agriculture of East Lothian—London, 1805, by Robert Somerville .....
An Account of the Husbandry of Scotland 2 vols—Edinburgh, 1813, by Sir John Sinclair .....
Hints and Observations on the Improvement of Agriculture—London, 1795, by J. M'Phail .....
A General View of the Agriculture of the County of Kent, by Jno. Boys.....
Observations on Neat Cattle — Leeds, 1811, by Jno. Tindall .....
General View of the Agriculture of the County of Berwick—London, 1809, by Robert Kerr .....

} Dr. Eddison.

General View of the Agriculture of the County of Stafford—London, 1813, by William Pitt	Dr. Eddison.
A Review of the Reports to the Board of Agriculture from the Northern Department of England—York, 1808, by — Marshall	
Observations on Live Stock, by George Culley.....	
The Art of Valuing Rents and Tillages—London, 1824, by J. S. Bayldon.....	
A Synopsis of Husbandry—London, 1799, by Jno. Bannister	
The Modern Improvements in Agriculture—London, 1784, by — Forbes.....	
The Science of Horticulture—London, 1818, by Joseph Hayward	
A Treatise on Agriculture and Rural Affairs—Edinburgh, 1811, by Robert Brown.....	
The Farmer's Calendar—London, 1805, by Arthur Young .....'''.....	
The Complete Grazier, or Farmer and Cattle Dealer's Assistant — London, 1807	
Geography Anatomized; or the Geographical Grammar — London, 1722, by P. Gordon	
The Early Years of the Leeds Library—Leeds, 1879	
Annual Report of the United States Geological Survey, Washington, 1880, by Clarence King	Department of the Interior.
Reports from the Consuls of the United States on the Commerce, &c., of their Consular Districts, No. 9, 1881	The Department of State.
Report of the Meteorological Service of the Dominion of Canada, 8vo, Ottawa, 1881, by G. T. Kingston, M.A.	G. T. Kingston, Superintendent of Meteorological Office, Toronto.
Reports relative to the Exhibition of Apparatus for the Utilisation of Gas, Electricity, &c.	Glasgow Philosophical Society.
Bulletin No. 1 of the American Museum of Natural History	American Museum.
The Scientific Roll, conducted by Alexander Ramsay, F.G.S., 1881	The Author.

"Caer Pensauelcoit"	The Author.
Florideernes Morphologi, 4to, Stockholm, 1879, by J. G. Agardh	Royal Swedish Academy of Sciences.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly)	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society.....	Royal Astronomical Society.
Atti della R. Accademia dei Lincei.....	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland...	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute...	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society.....	Yorkshire Philosophical Society.

Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year).	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh Transactions of do.	Royal Society of Edinburgh.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar Bihang till Kongliga Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society Annual Report of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.

Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club...	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College.....	The College.
Annual Report of Harvard University...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.....	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales.....	The Department, New South Wales.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collection ... " Contributions to Knowledge Report of the Smithsonian Institution ...	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do.	Manchester Literary and Philosophical Society.

Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Geological Record.....	Purchased.
Proceedings of the Royal Institution (2 pts. a year).....	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society .... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgements of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Proceedings of the Yorkshire Geological and Polytechnic Society	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences	Davenport Academy of Natural Sciences, Iowa, U.S.
Report of the Middlesex Hospital	The Hospital.
Calendar and Annual Report of the Yorkshire College	The College.

LIST OF OFFICERS AND COUNCIL,

1882-3.

OFFICERS:

PRESIDENT	REV. JOHN GOTT, D.D.
VICE-PRESIDENTS	J. E. EDDISON, M.D. EDWARD ATKINSON, F.L.S.
TREASURER	HENRY OXLEY.
HONORARY SECRETARIES . .	RICHARD REYNOLDS, F.C.S. A. W. RÜCKER, M.A.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., M.A., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART .	J. E. EDDISON, M.D.
HONORARY LIBRARIAN . .	T. E. THORPE, Ph.D., F.R.S.

The above officers, with the following gentlemen, form the

COUNCIL.

E. FILLITER, F.G.S.
J. HORSFALL, M.A., F.R.C.S.
J. I. IKIN, F.R.C.S.
A. G. LEGARD, M.A.
F. M. LUPTON, M.A.
JOHN MARSHALL, M.A.
W. NICHOLSON PRICE.
JOHN RALPH, M.A.
T. SCATTERGOOD.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary	W. F. HUSBAND, LL.B.
Curator's Assistant . .	ALFRED DENNY.

LIST OF MEMBERS AND SUBSCRIBERS.

1882-3.

**Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	
4	Arthington, Robert	Headingley.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Ribston, near Wetherby.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	York Place.
9	Broadhead, Wm. Henry	31, Sholebroke Avenue, Chapeltown Road.
11	*Brown, James	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
17	Clapham, Samuel	Warwick Villas.
19	*Coghlan, William	
21	Cudworth, John W.	43, Mount Preston.
22	Denison, William Beckett	Nun-Appleton, York.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	7, High Street, Hull.

28	Empson, Christopher	Beechwood, Sowerby Bridge.
29	Ford, Mrs.	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares)	Woodsley House.
36-8	Gott, William Henry (3 shares)	Armley House.
61	Greenhow, Wm. T.	Newton Cottage, Chapel-Allerton.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Avenue House, Woodhouse Lane.
42	Heaton, Beresford Rimington	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	Clarendon Place.
48	Ingham, William	
49	Jowitt, John	Harehills, Potternewton, near Leeds.
51	Kinnear, Thomas John, M.A.	The Abbey, Malton.
52	*Latimer, John	
55	Luccock, John Darnton	54, North Street.
32	Lupton, Edward Basil	Moorlands, Headingley.
57	Lupton, Francis	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A.	Wellington Street.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
58	*Makins, Charles	
77	Marsh, John Jenks	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	Headingley House.

60*	Marshall, Rev. Edmond Henry .	
63	Marshall, Henry Cowper .	Weetwood Hall.
64, 65*	Marshall, J. G., F.G.S. (2 shares) .	
66	Marshall, Reginald Dykes	Cookridge Hall.
67	Marshall, Victor Alexander Ernest, B.A. .	Monk Coniston, Ambleside.
7	North, John .	East Parade.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	Shepherd, John .	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.
50	Taylor, John Charles .	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs. .	
43	Tennant, Robert .	Eastbury, Watford.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	15, Springfield Mount.
76	Ward, William Sykes, F.C.S. .	Denison Hall, Hanover Square.
12	Wilson, Rev. Benjamin .	Bank House, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

118	Anderson, Christopher .	Osborne Terrace.
1	Atkinson, Daniel Hopkin.	2, Albert Avenue, Starbeck, near Harrogate.
32	Atkinson, Edward, F.L.S.	Eldon House, Woodhouse Lane.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A. .	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.

15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5, 6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7*	Buckton, George .	
89	Buckton, Joshua .	West Lea, Meanwood.
8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	Little Morton, East Retford.
90	Butler, J. O. .	The Abbey House, Kirkstall.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William	Arksey, Doncaster.
22	Chapman, Thomas .	11, Sunny Bank.
10*	Cliff, Joseph .	
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
77	Crofts, John .	Ben Rhydding, Leeds.
30*	Derham, Mrs. L. E. .	
18*	Donisthorpe, G. E. .	
19	Fairbairn, Sir Andrew, M.A., M.P., .	Askham Richard, near York.
20*	Farrer, James .	
105	Ferguson, William .	St. Mary's Mount, Newton Park, Leeds.
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15,	*Gott, Wm. Ewart (P) (10 shares) .	
23	Hargrave, James .	Willaston House, Harrogate.
16	Harvey, William .	West View, North Hill Road.
24	Henderson, Rev. W. G., D.C.L. .	Grammar School.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	North Hill Road, Headingley.

117	Howarth, Edward .	Elmwood House.
36	Hudson, Henry .	Oakwood, Roundhay.
37	Hudson, Robert John .	The Poplars, Woodlesford.
52	Ingham, Charles Alfred .	Belmont, Chorley Lane.
38	Ingham, Henry Constantine .	23, Lyddon Terrace.
120	Ingham, Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhirst, Potternewton.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James .	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorn .	Cardigan House, Headingley.
47	Kitson, James, Jun. .	Spring Bank, Headingley.
48	Kitson, Mrs. .	Burley Hill, Leeds.
50	Leather, J. Towlerton .	Leventhorpe Hall, Swillington.
53	Lupton, Arthur .	Headingley Hill.
95	Lupton, Arthur Greenhow	Wellington Street.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, Darnton .	The Harehills, Roundhay Road.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Wellington Street.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Road, Headingley.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
59	Margerison, J. L. .	4, Porchester Gate, Bayswater Road, London.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A. .	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
72	Marshall, John .	Church Institute.
62	Marshall, Stephen Albert B.A. .	Weetwood Hall.
27	Maude, Edmund .	Middleton Lodge, Beeston.
29*	Milner, Henry B. W. .	

64	Nickols, Richard .	Hill Top, Bramley.
65, 66	Nicholson, Albert H. (2 shares) .	
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28*	Passavant, P. W. .	
11	Price, William Nicholson .	Mount Pleasant.
93	Ralph, John, M.A. .	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John .	Park Row.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, Edward .	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares).	Weetwood Grove.
70	Stewart, G. M. .	
57	Stringer, John William .	Inglebank, Far Headingley
73	Teale, T. Pridgin, M.A., F.R.C.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert (P) .	Eastbury, Watford.
76	Tennant, Thomas .	21, Blenheim Terrace.
78	Tetley, F. W. .	Fox Hill, Weetwood.
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall .	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William .	28, Albion Street.
111	Watson, William Henry .	Horsforth.
97	Weston, Edward .	4, Woodland Grove, New Leeds.
42	Whiting John .	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane
31	Wilkinson, William .	St. Mary's Mount, Newton Hill.
85	Wilson, John .	Seacroft Hall.
17	Wilson, Richard .	Commercial Street.
35	Wood, Richard .	Newton Villa, Potternewton.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTON OF TWO GUINEAS.

2	Atkinson, J. H.	12, East Parade.
6	Croft, Samuel	Gledhow.
7	Garlick, William	6, Hyde Terrace.
9	Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A.	Meanwood.
35	Armstrong, Prof. G. F., M.A.	Vold House, Clarendon Road.
2	Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Burley View.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
8	Bolland, W. T.	West Wood Mount, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
12	Carbutt, E. H., M.P.	19, Hyde Park Gardens, London, W.
13	Carter, Robert Meek	
14	Corson, George	Wood Lane, Headingley.
26	Davey, Henry	Rupert Lodge, Headingley.
16	Denny, T. G.	Hyde Park.
19	Eddison, Frederick	The Manor, Adel.

20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
23	Ford, T. B. P.	Bentham, near Lancaster.
69	Fraser, James B.	44, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A.	30, Hyde Terrace.
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Crown Chemical Works, Crown Street.
81	Holroyd, James	4, College Road.
29	Holt, Henry Percy, C.E., F.G.S.	Fairlea, Palatine Road, Didsbury, Manchester.
30	Holt, Joseph (P)	Ogbeare Hall, Holsworthy, Devon.
31	Illingworth, William	Roundhay Grove.
32*	Irwin, Edwin	
33	Irwell, Julius	Highfield House, Headingley.
67	Jefferson, Peter	6, De Grey Terrace.
37	Kemplay, Miss	Providence Lodge, Claypit Lane.
86*	Lambert, Joseph	
38	Lawson, Thomas	Newton Hill, Potternewton.
39	Lawson, John	The Manor, Bramhope, Otley.
41	Ledgard, Mrs.	Eller Close, Roundhay.
88	Legard, Albert G., M.A.	Grosvenor Terrace, Headingley.
44*	McCheane, Rev. J. H., M.A.	
43	Manning, H. J.	
40	Marshall, Prof. John, M.A.	6, Spring Road, Headingley.
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Otley Road, Headingley.
47	Morley, Herbert Ogle	
48	Myers, William Beswick	13, Park Square.
49	Myers, W. C.	Grove House, Roundhay.

50	Nelson, Henry	St. John's Cottage, St. John's Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Chapeltown Road.
62	Riley, H. W.	King Street.
73	Rowley, Walter, F.G.S.	Meanwood.
65	Rücker, Prof. A. W., M.A.	Claremont, Leeds.
66	Sharpe, Miss	21, Victoria Place, Camp Road.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
70	Somers, Francis	Fountain Terrace.
71	Stables, James	Lane Ends, Horsforth.
74	Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
36	Tennant, John	18, Albion Street.
18*	Thornton, Charles	
76	Thorpe, Prof. T. E., Ph.D., F.R.S.	Oak Bank, Shaw Lane, Headingley.
77	Titley, Anthony	Manor House, Victoria Grove, Headingley.
78	Titley, T. A.	Oakley House, Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.
82	Walker, H. B.	Heath Cottage, Moortown.
83	Ward, Edmund	Denison Hall, Hanover Square.
57	Ward, George, F.C.S.	Buckingham Terrace, Headingley.
90	Ward, William	15, St. John's Terrace.
84*	Whiteley, Thomas	
85	Willson, J. J.	Newton Grove.
42	Wilson, Mrs. Richard	Brown's Bank, Commercial Street.
87*	Young, John	

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	Woodhouse Lane.
Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Almond, Geo. Spedding	Westgate, Dewsbury.
Ambler, T.	9, Park Place.
Anson, G. E.	The Woodlands, Weetwood.
Appleyard, T. W., Jun.	8, De Grey Road.
Armistead, Edwin	Albion Street.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	Clarendon Road.
Barling, John	94, Belle Vue Road
Barran, Charles	3, Mount Terrace, Chapel-Allerton.
Barran, John, jun.	St. Ann's Grange, Burley.
Barran, A.	Chapel Allerton Hall.
Barran, Rowland Hirst	Do. do.
Bartholomew, W. H., C.E.	Ridge Way House.
Battle, Walter	The Elms, Chapeltown Road.
Battye, C.	North Lane, Headingley.
Birchall, Oswald	Moor Bank, Ilkley.
Blackburn, H. G.	Bank House, Horsforth.
Bland, Miss Mary Jane	Lilford House, Queen Square.
Bothamley, C. H., F.C.S.	Yorkshire College.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Brigg, Matthew A.	South View, Potternewton.
Brigg, Thomas S.	Oak Bank, Headingley.
Brocklehurst, T. P.	High School, Roundhay.
Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Bulmer, Charles	Blenheim Lodge.
Burnett, F.	30, Mount Preston.
Butler, Edmund	Kirkstall Forge.
Campbell, Archibald	23, Hyde Terrace.

Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Chorley, R.	30, Edwin Road.
Churton, Thomas, M.D.	Clarendon Road.
Clare, W., M.D.	Park Square.
Clark, Miss	Potternewton.
Clarke, Thos. Robt.	Newton House, Spencer Place, New Leeds.
Clemons, G. H.	1, Grosvenor Mount.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.
Conder, Rev. E. R., M.A.	1, Newton Grove, New Leeds.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	67, Sholebroke Avenue, Chapeltown Road.
Crawford, James	Chapel-Allerton.
Crawford, J. W.	Newton Lane.
Croysdale, John	4, Beech Grove Terrace.
Dalton, Thos. Wells	69, Sholebroke Avenue, Chapeltown Road.
Davis, Edward	Milton Lodge, Far Headingley.
Dawson, William	Larchfield Mills, Hunslet Lane.
Drake, Dr.	Headingley Lane.
Dufton, Arthur Wellesley	74, Springfield Place.
Dykes, W. H.	Regent House, Grosvenor Road, Headingley.
Ellison, James Edward	10, De Grey Road.
Exley, William	Cleveland Villa, Shipley.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Foster, George	Osmondthorpe.
Gane, Lawrence	East Parade.
Gaskell, George V.	Willow House, Chapeltown Road.
Goodall, Charles	Francis Street, New Leeds.
Goodson, R.	Bedford House, Roundhay.
Hall, Frederick, M.D.	St. Mark's Villas, Woodhouse Lane.

Hall, Rev. G. Walker	34, Springfield Place.
Hall, William	Moor Lane, Headingley.
Hallilay, John	Burley Road.
Harding, T. W.	St. Ives, Headingley.
Harding, Anthony Robinson	Sefton House, Louis Street, New Leeds.
Hargrove, Rev. C., M.A.	Montpelier Terrace.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	30, Hyde Park Terrace.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hellier, J. B., M.D.	De Grey Terrace.
Hepworth, S. C.	West Park Street, Dewsbury.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Hobson, Frederick	49, Briggate.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Holmes, John	Holmstead, Roundhay.
Horsfield, H. K.	Newton Grove.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Ingham, Frederick	Morris Wood, Kirkstall.
Ingham, Henry	Heaton Lodge, Wortley.
Jackson, Richard	Commercial Street.
Jackson, Miss	15, Eldon Place.
Jefferson, J. S.	15, York Place.
Jessop, G. W.	Hall Royd, Shipley.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, F. W.	2, Beech Grove Terrace.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Jowitt, Miss	Woodfield, Newton Hill.
Joy, A. B.	Addingham, Ilkley.
Joy, W. Lomas	Weetwood Mount.
Kettlewell, C. B.	38, Commercial Street.

Lambert, William	Oakfield, Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove Hall.
Lawson, F. W.	Hillary Lodge, Cavendish Road.
Lee, W.	Leeds School Board.
Lupton, Arnold, M.I.C.E.	Crossgates.
Lupton, William W.	Newton Hill.
Mathers, John S.	Hanover House.
Matterson, Miss	Cavendish House, Cavendish Road.
Maude, Miss	Knowsthorpe House.
Megson, J. C.	Spencer Place, New Leeds.
Meredith, S. R.	14, Park Place.
Meyer, Adolf	2, Brandon Villas, Chapeltown Road.
Middleton, William	Gledhow Grange.
Middleton, William	Acacia, Roundhay.
Motley, Francis	Mount Pleasant.
Naylor, C. T.	Newton Lodge, Potternewton.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Burley Road.
Newstead, J. S.	Woodville, Horsforth.
Nichols, J. H.	Woodsley Lodge, St. John's Hill.
Pawson, John Edward	Lawns House, Farnley, near Leeds.
Payne, E. S.	6, Crimbles Street, Camp Road.
Pearson, John Thomas	Moor House, Far Headingley.
Pepper, J. E.	23, Mount Preston.
Philp, W., M.A., B.Sc.	36, Portland Crescent.
Pickering, John	Mount Preston.
Pickles, J. J.	68, Camp Road.
Pope, Edward	Farfield, Moor-Allerton.
Powell, William	13, Park Place.
Ransome, Prof. Cyril, M.A.	Ash Grove, Victoria Road.
Reffitt, J. W.	5, Victoria Terrace, Belle Vue Road,
Reid, T. Wemyss	Cardigan Road.
Rhodes, John H.	27, Park Square.
Richardson, J. N.	The Woodlands, Weetwood.
Rider James	Pease's Buildings.

Robinson, Thomas	The Manor House, Farnley.
Robinson, Edmund	42, Park Square.
Robson, A. W. M.	Hillary Place.
Rooke, Charles S.	Newton Hill, Potternewton.
Ryder, Charles	Westfield, Chapeltown.
Scatcherd, Oliver	Virginia Road.
Shackleton, Joseph	West House, New Wortley.
Shackleton, Thomas	1, Headingley Terrace.
Shaw, Mrs.	St. Mark's Villa.
Simpson, James T.	4, Blenheim Terrace.
Slade, Robert	14, Springfield Mount.
Smeeton, Wm.	Commercial Street.
Smeeton, Miss E.	Newton Hill.
Smith, Stephen Ernest	Oak Bank, Shaw Lane, Headingley.
Snowdon, Henry	Ridge House, Leeds.
Spark, F. R.	29, Hyde Terrace.
Stables, Ashley	Horsforth.
Tannett, Mrs.	Burton Crescent, Shaw Lane.
Taylor, Mrs. M.	28, Clarendon Road
Tetley, C. F., M.A.	Spring Road, Headingley.
Thompson, Vincent T.	Belle Vue Road.
Thompson, Rev. J.	Vicarage, Hunslet.
Do. Miss	St. Mark's Villas.
Thrippleton, John	2, Evaline Terrace, Burley, Leeds.
Tiffany, George John	17, Grove Terrace.
Turner, Joseph	Spencer Place, New Leeds.
Walker, Henry	Oak House, Headingley.
Walker, James	Newton Hill.
Walker, George	Do.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, William	Osmondthorpe Hall.
Walker, Edward	Elmwood Place.
Walker, Francis	Do.
Watson, Charles	Wanstead House, Burley.
Watson, Miss	42, Woodsley Road.
Wheelhouse, C. G., F.R.C.S.	Hillary Place.
Whitehead, John	Newstead House, Spencer Place, New Leeds.

Whitham, Thomas	Bramhope, Otley.
Willans, J. W.	Beech Holme, Burley.
Williamson, Henry	Newport House, Headingley.
Willis, Miss	8, Ward Terrace, Hunslet Road.
Woodall, H.	17, Ashwood Villas.
Wright, Charles James	Lynton Villa, Virginia Road.
Yewdall, Edwin	40, Wade Lane.

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Atkinson, Miss Emily	Clarendon Road.
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Fairley, Mrs. T.	8, Newton Grove
Filliter, Miss	West Mount, Clarendon Road.
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Goodson, Mrs. R.	Bedford House, Roundhay.
Hall, Mrs. F.	St. Mark's Villas, Woodhouse Lane.
Hall, Mrs. W.	Headingley.
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Hargrove, Mrs. C.	Montpelier Terrace.
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Hepper, Miss	Clareville, Headingley,
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Hewetson, Miss	Do.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirst, Mrs. J. A.	Adel.
Hogg, Mrs. Henry	29, Blenheim Terrace.
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Holroyd, Mrs.	4, College Road.

Holroyd, Miss	4, College Road.
Holroyd, Miss Jane	Do.
Horsfield, Miss	Newton Grove.
Horsfield, F.	Do.
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Ingham, Miss	Do. do.
Ingham, Miss F. H.	Do. do.
Ingham, Miss L. C.	Do. do.
Ingham, Mrs. Frederick	Morris Wood, Kirkstall.
Jackson, Mrs. R.	Commercial Street.
Jacoby, Miss Anna	29, Cookridge Street.
Jefferson, Miss	15, York Place.
Jefferson, Miss M.	Do.
Jessop, Mrs. T. R.	32, Park Square.
Johnston, Miss M. N.	2, Beech Grove Terrace.
Josephy, Mrs. B.	25, Hyde Terrace
Josephy, Mrs. H.	5, Beech Grove Terrace.
Jowitt, Miss E. M.	Woodfield, Newton Hill.
Jowitt, Miss F.	Harehills Grove, Leeds.
Joy, Mrs. Lomas	Weetwood Mount.
Joy, Miss	Do.
Kettlewell, Miss E.	38, Commercial Street.
Kettlewell, Miss F. A.	Do.
Lambert, Arthur	Oakfield, Headingley.
Lawson, Miss M.	Bramhope.
Ledgard, Miss	Eller Close, Roundhay.
Lee, Mrs. W.	Leeds School Board.
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Meredith, Mrs. S. R.	14, Park Place.
Middleton, Mrs. W.	Gledhow Grange.
Middleton, Miss	Do.
Middleton, Mrs. W.	Acacia. Roundhay.
Motley, Mrs. F.	Mount Pleasant.
Motley, L.	Do.

Myers, Miss	Cavendish House.
Myers, Miss	Grove House, Roundhay
Naylor, Mrs. Charles	Newton Lodge.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, P.	St. John's Cottage, St. John's Road.
Nelson, Miss C. E.	Do. do.
Nelson, Miss E. A.	Do. do.
Nelson, Miss Louisa	Do. do.
Newstead, Mrs. J. S.	Woodville, Horsforth.
Nichols, Miss	Woodsley Lodge, St. John's Hill.
Nussey, Miss	Springville, Shaw Lane, Headingley.
Nussey, Miss M.	Do do.
Passavant, Miss	De la Haye House, Chapeltown Road
Passavant, Miss L. M.	Do. do.
Passavant, Miss Fanny	Do. do.
Passavant, Miss Alice	Do. do.
Pearson, Mrs. J. T.	Moor House, Headingley.
Pepperell, Miss	Manor House, Farnley.
Pickles, Mrs. J. J.	68, Camp Road.
Pope, Mrs. Edwd.	Farfield, Moor-Allerton.
Pope, Miss	Do. do.
Ralls, Miss	Lilford House, Queen Square.
Ralph, Mrs. John	Lifton House.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Richardson, Miss	The Woodlands, Weetwood.
Richardson, Miss Lilly	Do. do.
Rider, Mrs. J.	Harrogate.
Robinson, Miss	The Manor House, Farnley.
Robinson, Mrs. E.	Park Square.
Rooke, Miss	Newton Hill, Potternewton.
Rooke, Miss E. M.	Do. do.
Russell, Miss	Ridge Way House, Headingley.
Ryder, C. F.	Westfield, Chapeltown.
Ryder, Miss A. E.	Do. do.
Ryder, Miss Mary	Do. do.
Ryder, Miss Louisa	Do. do.
Scatcherd, Mrs. O.	Virginia Road.

Shackleton, Miss	1, Headingley Terrace.
Shaw, Miss	St. Mark's Villa.
Slade, Mrs. R.	14, Springfield Mount.
Smeeton, Mrs. W.	Commercial Street.
Smeeton, C. W.	do.
Smeeton, Miss Alice	do.
Smith, Mrs. Farrar	Hope Villa, Woodhouse Lane.
Somers, R. M.	Fountain Terrace.
Spark, Mrs. F. R.	29, Hyde Terrace.
Spark, Miss	do.
Stables, Miss	Horsforth.
Stables, Miss Lucy	do.
Tatham, Miss G.	Springfield Mount.
Taylor, Miss J.	28, Clarendon Road.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
Tetley, Mrs. C. F.	Spring Road, Headingley.
Thompson, Mrs. V.	Belle Vue Road.
Thompson, Miss E.	St. Mark's Villas.
Turner, Mrs. J.	Spencer Place, New Leeds.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss M. I.	Newton Hill.
Walker, Miss M. H.	Do.
Walker, Miss E. H.	Do.
Walker, Mrs. William	Osmondthorpe Hall.
Walker, Miss Florence	Do. do.
Walker, Miss Adeline	Do. do.
Walker, Herbert	Do. do.
Watson, Mrs. Charles	Wanstead House, Burley.
Watson, Miss K.	42, Woodsley Road.
Wheelhouse, Mrs. C. G.	Hillary Place.
Whitehead, Mrs. J.	Newstead House, Spencer Place, New Leeds.
Whiteley, Mrs. T.	Blenheim Square.
Whitham, Arthur	Bramhope, Otley.
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Williamson, Mrs. H.	. Newport House, Headingley	Gardens.
Williamson, Miss	. Do.	do.
Williamson, Miss Amelia	. Do.	do.
Williamson, Harry	. Do.	do.
Williamson, James	. Do.	do.
Yewdall, Mrs.	. 40, Wade Lane.	

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

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Clements R. Markham, C.B., F.R.S., F.L.S., Sec.R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

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Richard Owen, M.D., D.C.L., LL.D., F.R.S., Foreign Associate of the Institute of France, &c., British Museum, London.

C. C. Oxley, Minster House, Ripon.

Sir H. S. Parkes, C.B., H.M. Consul-General, Jeddo, Japan.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

The Lord Bishop of Ripon, F.R.S., The Palace, Ripon.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. Gustave Seyffarth, A.M., D.D., Ph.D., 1263, 4th Avenue, New York, U.S.

Col. Edmund Smyth, Welwyn Grange, Hertfordshire.

John Robert Tennant, Kildwick Hall.

The Right Rev. the Bishop of Nottingham, Leasingham, Sleaford.

Edward Harry Woods, Rosario, in the Argentine Republic.

The Lord Archbishop of York, Bishopthorpe.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

Septembers/83

LEEDS

Philosophical & Literary Society

THE ANNUAL REPORT

For 1882-3.

Se Le 1

Boston Society of Natural History.

From the Society.

Received September 8, 1883.

THE

SIXTY-THIRD REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1882-3.

Read at the Annual Meeting, May 1st, 1883.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.
MDCCCLXXXIII.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers :—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, Conversazione, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures and Conversazione. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, Lectures, and Conversazione, but not to business meetings; nor have they any transferable tickets to admit visitors :—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-THIRD SESSION.

The Society is to be congratulated on the successful character of its meetings during the session just ended. It is believed that the series of Lectures and the Conversazione were of even greater interest than usual, which is the more gratifying, as the Council were compelled by the state of the finances to exercise the utmost economy in making the arrangements for those meetings.

The special thanks of the Society are due to the Right Hon. Sir H. Bartle E. Frere, Bart., G.C.S.I., G.C.B., F.R.S.; Mr. T. Wemyss Reid; Mr. T. P. Teale, M.A., F.R.C.S.; and Sir F. J. Bramwell, F.R.S., M.Inst.C.E., whose valuable Lectures were delivered without charge to the Society; and to Mr. Henry Seebohm, F.L.S., F.Z.S., who presented his Lecture fee to the New Gallery Fund.

The Council have to acknowledge, with thanks, Mr. T. Emsley's annual contribution of £10, and a donation of £1 each from Mr. R. Bickerton Turner, Mr. John Barran, Junr., and of 10s. 6d. each from Mr. W. N. Price and Mr. W. Cheetham, towards the purchase of a disarticulated skull of a cod for the Museum.

The financial account would have shown a considerable reduction in the debt of the Society if it had not

been for the expenditure upon the heating apparatus, the necessity for which was mentioned in the last Report. A new boiler has been put in, and the arrangement of the pipes, which was reported by competent surveyors to be faulty, has been altered, at a total cost of about £160.

The ordinary income of the Society, while amply sufficient to meet the customary annual expenses, and to provide a certain amount for the purchase of specimens for the Museum, is not large enough to bear the whole cost of the important structural repairs and alterations with which it has been charged for the last few years; and in the absence of any special effort to meet this special outlay, it will require the appropriation of the surplus income of three or four years to cancel the present debt, which now amounts to £231. This is £12 more than was due to the Treasurer at the beginning of the year.

The Council are pleased, however, to report that something has been done during the year to complete the fund required to pay for the New Gallery and Cases in the Large Zoological Room, the cost of which was defrayed out of the general income of the Society. The sum of £36 15s. 0d. has been contributed by the gentlemen whose names appear in the Statement of Receipts which is annexed to this Report, in response to the appeal which the Council made in the course of the year to Members and Subscribers for this purpose. A balance of £70 still remains to be collected before this account can be considered to be closed, and it is earnestly hoped that those who take an interest in the Museum and appreciate

the services to education, which a proper exhibition of its valuable collections is calculated to render, will assist in completing this very desirable object.

The number of Members and Subscribers is rather less than it was at the end of last year, viz.:—

	1882.	1883.
Original Proprietary Members (78 shares) ...	72	72
New Proprietary Members (121 shares) ...	98	98
Ordinary Members	8	7
New Ordinary Members	87	82
Annual Subscribers of £1 1s.	193	189
Annual Subscribers of 7s. 6d.	186	181
Total ...	644	629

The Lectures and Papers delivered and read before the Society were the following :—

1. "Literature and Philosophy in South Africa." The Right Hon. Sir H. Bartle E. Frere, Bart., G.C.S.I., G.C.B., F.R.S., *Read Oct. 18th*, 1882.
2. "Mrs. Carlyle." T. Wemyss Reid. *Read Nov. 7th*, 1882.
3. "The Economical Combustion of Coal." T. P. Teale, M.A., F.R.C.S. *Read Nov. 21st*, 1882.
4. "Original and Borrowed Civilization." E. B. Tylor, D.C.L., F.R.S. *Read Nov. 28th*, 1882.
5. "The Egyptian Eclipse (May 17th, 1882)." Prof. Arthur Schuster, Ph.D., F.R.S. *Read Dec. 19th*, 1882.
6. "Wanderings near the Euphrates." Rev. Canon Tristram, D.D., F.R.S. *Read Jan. 16th*, 1883.
7. "The Life and Work of Charles Darwin." Prof. Miall, F.L.S., F.G.S. *Read Feb. 6th*, 1883.
8. "The Channel Tunnel." Sir F. J. Bramwell, F.R.S., M.I.C.E. *Read Feb. 20th*, 1883.
9. "The Poetry of Arthur Hugh Clough." R. H. Hutton, M.A. *Read March 6th*, 1883.
10. A Discussion on Thought Reading. *March 20th*, 1883.
11. "Siberia." Henry Seebohm, F.L.S., F.Z.S. *Read April 3rd*, 1883.
12. "The Life and Dramatic Compositions of Henry Purcell." W. Creser, Mus.D. *Read April 17th*, 1883.

The Conversazione, on December 5th, 1882, was pronounced to have been one of the most successful meetings of its kind. The history of the art of book-making was illustrated by writings on papyrus, palm leaves, and vellum; paper in various stages of manufacture; specimens of type-founding; composing; letterpress, lithographic and colour printing; manufacture of books; illustrations of photo-zincography; stereotyping and engraving; and by a large and valuable collection of MSS., early printed books, books remarkable for beauty of typography, rarity, or other circumstance. The chief contributors to this interesting exhibition were the President (Rev. Dr. Gott), The Dean and Chapter of York, Brasenose College, Oxford, Mr. Edward Hailstone, Mrs. Heaton, Rev. T. Sheepshanks, Mr. John Rhodes, Mr. John Stansfeld, Sir Edward Baines, Lady Reed, Messrs. Edward Baines and Sons, Messrs. McCorquodale and Co., Sir Charles Reed and Sons, Mr. Charles Goodall, Messrs. Dalziel Bros., and Messrs. Clay, Sons, and Taylor.

During the past year the Curator's attention has been chiefly directed to the Geological Collection, which has been cleaned and re-arranged. The cases have been painted internally for the first time, and thoroughly repaired, with the view of diminishing the amount of dust, which has hitherto accumulated with unpleasant rapidity. The Geological department has been enriched by several important donations. Mr. S. Chadwick, of Norton, near Malton, has contributed a valuable and extensive series of fossils from the Yorkshire Chalk. A set of remains of the principal Mammalia found in Kent's Cavern, Torquay, being part of the collection formed by the British Asso-

ciation Committee during the investigation of the Cavern, has been presented by the late Lord Haldon (owner of the Cavern) and the Committee of Exploration, through Mr. W. Pengelly, F.R.S. Prof. Williamson, of Owens College, Manchester, has supplied an important gap in our collection of Coal Plants, by the donation of a valuable specimen of Asterophyllites. In Part XII. of Prof. Williamson's Memoirs on the Organisation of the Fossil Plants of the Coal Measures (Phil. Trans., 1882), the Society's collection of Coal Plants is specially referred to, and a fine specimen of Halonia is described and figured.

In the Zoological department an empty table-case has been fitted up for the display of insects undergoing metamorphosis. Last summer the following living species were to be seen in various stages of transformation :— Vanessa antiopa, V. urticæ, V. polychloros, Zygæna filipendulæ, and Attacus cecropia. It is proposed to renew this interesting experiment on a larger scale this summer. A disarticulated cod's skull, prepared by Mr. E. T. Newton, has been purchased for the Museum by the gentlemen whose names are given elsewhere in this Report.

Mr. Edward Gledhill, of Frias, Colombia, South America, has contributed a number of weapons, &c., from Polynesian islands, besides some valuable South American minerals. Other donations are recorded in the full list appended to this Report.

The Council are informed that the limits of their space, which in most departments of the Museum have long been reached, are checking the growth of the collec-

tions to a serious extent. The difficulty can be met for the present by providing cabinets of drawers, in which series of specimens unsuited to attract the attention of the casual visitor can be stored and classified. Such additional accommodation would render possible a great improvement in the arrangement, especially of the fossils and minerals, while it would enable us to add greatly to the extent of those collections. Until increased space is provided little progress or extension is to be expected.

The number of visitors to the Museum during the year was 26,868, being 1,219 fewer than in the previous year.

A new classified Catalogue of the Library has been printed and distributed to the Members.

The Council have recommended for election as Honorary Members the Right Honourable the Earl of Enniskillen and Sir F. J. Bramwell, F.R.S., M.Inst.C.E., who have been duly elected by the Society.

To the Earl of Enniskillen the Society is under important obligations. In previous reports acknowledgment has been made of a set of photographs issued by the Geological Survey of the Western Territories of America, of fossil fishes (especially a fine series from the Carboniferous Limestone of Armagh), and of fossil corals from Lough Erne, all added to our collections by Lord Enniskillen's kindness. The Council have also felt it a pleasure to associate with the Society the name of an old pupil and friend of Agassiz, and of one who, by his famous collection of fossil fishes, his great knowledge of species, and his hospitable kindness to men of science, has done much to forward the progress of palæontology.

Sir Frederick J. Bramwell's Reports to the British Association, and his Lectures delivered before the Royal Institution, have made his name familiar in all scientific circles, while among practical engineers his reputation is deservedly high. The Society in electing Sir F. Bramwell records its gratitude for favours received, and its admiration for a long and beneficial public career.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1882.

1882.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	42·8 Fah.	30·108	2·485
February	44·5 ,,	29·975	1·642
March	47·0 ,,	29·733	1·775
April	46·8 ,,	29·571	3·213
May	54·5 ,,	29·862	1·195
June	56·5 ,,	29·692	3·325
July	60·2 ,,	29·504	3·040
August	60·2 ,,	29·904	1·630
September	54·9 ,,	29·687	1·135
October...	50·8 ,,	29·674	3·640
November	43·0 ,,	29·460	2·983
December	38·3 ,,	29·262	2·980

The mean monthly temperature was 49·9.

The mean monthly height of the barometer was 29·702 inches.

The total rainfall for the year was 29·043 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 76° on August 9th, 11th, and 12th; and the minimum 18° on December 12th.

The greatest barometric pressure was on January 18th, being 30·784 inches, the temperature of the mercury being 60°; the least pressure was on March 1st, being 28·694 inches, the temperature of the mercury being 55°.

The greatest fall of rain (during 24 hours) was on June 22nd, being 1·060 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1882-3.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1882 ...		...		0	18	9
„ Annual Subscriptions, viz.—						
78 New Proprietary Members, at 21/-...	81	18	0			
8 Original Ordinary ditto 42/-...	16	16	0			
57 New Ordinary ditto 21/- ..	59	17	0			
137 Annual Subscribers, at 21/-...	143	17	0			
28 New ditto 21/-...	29	8	0			
132 Annual Subscribers, at 7/6...	49	10	0			
34 New ditto 7/6...	12	15	0			
„ Arrears	44	9	6			
				438	10	6
„ Rent, viz.—						
Cellars	63	0	0			
Lecture Room	148	0	6			
				211	0	6
„ Receipts from Visitors to Museum ...	111	19	0			
„ „ „ Conversazione...	32	10	0			
				144	9	0
„ Sale of Catalogues	0	12	10			
„ Sundries	0	11	6			
				1	4	4
„ Donation from Mr. T. Emsley... ...		..		10	0	0
„ Donations to New Gallery Fund, viz.—						
Mr. H. Seebohm	10	10	0			
Mr. F. Baines	5	0	0			
Mr. Joshua Buckton	5	0	0			
Mr. James Kitson, Junr.	5	0	0			
Alderman G. Tatham	5	0	0			
Mr. Thos. Harvey	2	2	0			
Alderman Boothroyd	1	1	0			
Mr. W. W. Lupton	1	1	0			
Mr. T. Scattergood	1	1	0			
Mr. S. A. Marshall	1	0	0			
				36	15	0
„ Sale of Forfeited Shares				42	0	0
„ Balance due to Bank				231	2	10
				£1116	0	11

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1882				219	13	5
„ Repairs and Alterations	214	10	9			
„ Rates and Taxes	6	4	7			
„ Fire Insurance	15	0	0			
„ Coals, &c.	16	0	3			
„ Gas	17	0	5			
„ Cleaning	9	0	11			
				277	16	11
„ Salaries	357	2	6			
„ Fee to Auditor	2	2	0			
				359	4	6
„ Collections, viz.—						
Archæological	2	6	4			
Geological	1	2	5			
Zoological	6	5	10			
Library...	16	17	11			
				26	12	6
„ Postages	18	7	1			
„ Advertising and Printing	52	14	8			
„ Lectures	76	10	6			
„ Conversazione Expenses	55	7	6			
„ Collector's Commission	7	7	6			
„ Bankers' Commission...	7	11	0			
„ Sundries	13	11	5			
				231	9	8
„ Furniture				0	15	6
„ Balance in hand				0	8	5
				£1116	0	11

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above a correct abstract of the same,

May 22nd, 1883.

BEEVERS & SPICE,
CHARTERED ACCOUNTANTS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1882-3.

ZOOLOGY.

Skeleton of Monkey	Leeds School of Medicine.
Two birds' nests from South Africa	J. H. Leathley, Esq.
Tarantula, Mexico	Ed. Gledhill, Esq., U.S. Colombia.
Collection of Birds' Eggs, including Kestrel, Grouse, Partridge, Pheasant, Magpie, Swallow, Robin, Blackbird, &c.	Mr. T. Pollard.
Nest of Trap-door Spider and Tarantula	Mr. G. Leach, New York.
Eggs of Small Jungle-fowl, from Nicobar Islands; and Butterflies	Mrs. J. W. Baines, Oatlands, Burley, near Leeds.
Stuffed Peccary and Agouti	Arthur Lupton, Esq.

GEOLOGY AND MINERALOGY, &c.

Asterophyllites from Lower Coal Measures, near Ewood Bridge, Valley of Upper Irwell.....	Prof. W. C. Williamson, LL.D., F.R.S.
Collection of Fossils from the Yorkshire Chalk.....	S. Chadwick, Esq., Norton, Malton.
Auriferous Quartz, Pyrites, &c., from Daylesford District, near Ballarat.....	S. Clapham, Esq.
Silver Ore, Ruby Silver, Native Silver, and Crude Emerald Crystal—from U.S. Colombia, S. America	E. Gledhill, Esq., Frias, U.S. Colombia, South America.
Specimens of Crocidolite from Griqualand West and Diamantiferous deposit, with Garnets and Iron Pyrites from Kimberley Mines, South Africa.....	Elias Harris, Esq., 16, Blenheim Terrace, Leeds.
Collection of Animal remains from Kent's Cavern, Torquay.....	Lord Haldon and British Association through W. Pengelly, Esq., F.R.S.
Leg-bone of Moa from New Zealand ...	J. A. Irwin, Esq., Enniskillen.

ARCHÆOLOGY AND ETHNOLOGY.

Necklaces made from finger-bones, and Girdles from Port Blair, Andaman Islands; Cocoa-nut water-vessels	Mrs. J. W. Baines, Oatlands, Burley, near Leeds.
Relics from the Battlefield of Ishandula, Zululand (about 60 pieces)	J. H. Leathley, Esq.
Spear, Bow and Arrows, small Club, and Edged War Club, from Fiji.....	E. Gledhill, Esq., Frias, U.S. Colombia.
Bow and 9 Arrows, from Solomon Islands	
Long Spear and sundry Lances and Darts, small Bow and Darts, from Polynesian groups	
Spear and Native Head Dress, from Western Australia	
Tappa, from Fiji	
Stone Chisel, from ancient Indian grave, U.S. Colombia	
Fountain (Leeds Pottery)	Messrs. Broadhead & Sons, Whitelock Street, Leeds.

PUBLICATIONS.

Catalogue of Oriental Coins in the British Museum, by R. S. Poole, Vol. VII., 1882	The Trustees of the British Museum.
Catalogue of Hymenoptera, Vol. I., by W. F. Kirby, 1882	
Catalogue of Additions to the Manuscripts in British Museum, 1876-1881, by E. M. Thompson	
Catalogue of Batrachia Gradientia and Batrachia Apoda, by George Albert Boulenger, 1882	
Catalogue of Greek Coins in the British Museum, 2 vols., by R. S. Poole	
The Geology of Wisconsin, 2 vols., by T. C. Chamberlain	A. V. Dockery, Esq., American Consul.
Map of Western Palestine, illustrating the Natural Drainage, &c., by Lieuts. Conder and Kitchener	Edward Atkinson, Esq.
Greenwich Observations for 1880	Astronomer Royal.

Publications of the Bureau of Ethnology, Part I., by J. W. Powell	Smithsonian Institution.
Bulletin of the American Museum of Natural History, Vol. I., Nos. 2 and 3	American Museum.
Bulletin of the United States Geological and Geographical Survey of the Territories.....	United States Geological Survey.
New South Wales in 1881, by T. Richards	Royal Society of New South Wales.
The Minerals of New South Wales, by Prof. A. Liversidge, F.R.S.	The Author.
Reports from Consuls of the United States on the Commerce, &c., of their Districts	Department of State.
Proceedings of the Institution of Mechanical Engineers (Leeds Meeting) 1882...	Institution of Mechanical Engineers.
Electrical Experiments to determine the location of the bullet in the body of the late President Garfield, by Prof. Graham Bell.....	The Author.
Madeira Spectroscopic, by C. Piazzi Smyth, F.R.S.	The Author.
Catalogus Plantarum circa Cantabrigiam nascentium, by John Ray, London, 1660	Rev. C. Hargrove, M.A.

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly)	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh Transactions of do.	Royal Society of Edinburgh.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar Bihang til Kongliga Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.

Natural History Transactions of Northumberland and Durham.....	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society .... Annual Report of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History ..... Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute.....	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society.....	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College.....	The College.
Annual Report of Harvard University	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.

Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association.....	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales	The Department, New South Wales.
Proceedings of the Royal Society.....	Royal Society.
Smithsonian Miscellaneous Collection... " Contributions to Knowledge Report of the Smithsonian Institution...	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Geological Record	Purchased.
Proceedings of the Royal Institution (2 pts. a year)..... ...	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April)	Zoological Society.
Edinburgh Astronomical Observations	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society ..... Proceedings do (several pts. a year)	American Philosophical Society.
Abridgements of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U. S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger ...	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.

Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Proceedings of the Yorkshire Geological and Polytechnic Society.....	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences.....	Davenport Academy of Natural Sciences, Iowa, U.S.
Report of the Middlesex Hospital.....	The Hospital.
Calendar and Annual Report of the Yorkshire College.....	The College.
Annual Report and Publications of the Manitoba Historical and Scientific Society	Manitoba Historical and Scientific Society.
Transactions of the Yorkshire Naturalists' Union	

LIST OF OFFICERS AND COUNCIL,

1883-4.

OFFICERS:

PRESIDENT	J. E. EDDISON, M.D.
VICE-PRESIDENTS	REV. JOHN GOTT, D.D. EDWARD ATKINSON, F.L.S.
TREASURER	HENRY OXLEY.
HONORARY SECRETARIES . .	RICHARD REYNOLDS, F.C.S. A. W. RÜCKER, M.A.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., M.A., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART .	J. E. EDDISON, M.D.
HONORARY LIBRARIAN . .	T. E. THORPE, Ph.D., F.R.S.

The above officers, with the following gentlemen, form the

COUNCIL.

HENRY DAVEY.
E. FILLITER, F.G.S.
REV. CHAS. HARGROVE, M.A.
A. G. LEGARD, M.A.
F. M. LUPTON, M.A.
JOHN MARSHALL, M.A.
W. NICHOLSON PRICE.
JOHN RALPH, M.A.
T. WEMYSS REID.
T. SCATTERGOOD.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary	W. F. HUSBAND, LL.B.
Assistant Curator . .	ALFRED DENNY.

LIST OF MEMBERS AND SUBSCRIBERS,

1883-4.

**Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS.

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	
4	Arthington, Robert	Headingley.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Ribston, near Wetherby.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	York Place.
9	Broadhead, Wm. Henry	31, Sholebroke Avenue, Chapeltown Road.
11	*Brown, James	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
17	Clapham, Samuel	Warwick Villas.
19	*Coghlan, William	
21	Cudworth, John W.	43, Mount Preston.
22	Denison, William Beckett	Nun-Appleton, York.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	7, High Street, Hull.

28	Empson, Christopher	Beechwood, Sowerby Bridge.
29	Ford, Mrs.	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares)	Woodsley House.
36-8	Gott, William Henry (3 shares)	Armley House.
61	Greenhow, Wm. T.	Newton Cottage, Chapel-Allerton.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Avenue House, Woodhouse Lane.
42	Heaton, Beresford Rimington	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	5, Blenheim Terrace.
48	Ingham, William	Belmont, Chorley Lane.
49	Jowitt, John	Harehills, Potternewton, near Leeds.
51	Kinnear, Thomas John, M.A.	The Abbey, Malton.
52*	Latimer, John	
55	Luccock, John Darnton	54, North Street.
32	Lupton, Edward Basil	Moorlands, Headingley.
57	Lupton, Francis	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A.	Wellington Street.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
58*	Makins, Charles	
77	Marsh, John Jenks	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	Headingley House.

60*	Marshall, Rev. Edmond Henry .	
63	Marshall, Henry Cowper .	Weetwood Hall.
64, 65*	Marshall, J. G., F.G.S. (2 shares) .	
66	Marshall, Reginald Dykes .	Cookridge Hall.
67	Marshall, Victor Alexander Ernest, B.A. .	Monk Coniston, Ambleside.
7	North, John .	East Parade.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	Shepherd, John .	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.
50	Taylor, John Charles .	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs. .	
43	Tennant, Robert .	45, Portland Place, London, W.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
76	Ward, William Sykes, F.C.S. .	Denison Hall, Hanover Square.
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

118	Anderson, Christopher .	Osborne Terrace.
1	Atkinson, Daniel Hopkin .	2, Albert Avenue, Starbeck, near Harrogate.
32	Atkinson, Edward, F.L.S.	Eldon House, Woodhouse Lane.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A. .	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.

15	Bilbrough, Joseph Brooks .	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5, 6*	Brown, William (2 shares)	
89	Buckton, Joshua .	West Lea, Meanwood.
8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	Little Morton, East Retford.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
22	Chapman, Thomas .	
10*	Cliff, Joseph .	
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
77	Crofts, John .	Ben Rhydding, Leeds.
30*	Derham, Mrs. L. E. .	
18*	Donisthorpe, G. E. .	
19	Fairbairn, Sir Andrew, M.A., M.P. .	Askham Richard, near York.
20*	Farrer, James .	
105	Ferguson, William .	St. Mary's Mount, Newton Park, Leeds.
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15,	Gott, Wm. Henry (P) (10 shares) .	Armley House.
23	Hargrave, James .	Willaston House, Harrogate.
7	Hargrove, Rev. Charles, M.A. .	8, Montpelier Terrace.
16	Harvey, William .	West View, North Hill Road.
81	Hatch, S. C. .	Oak Lodge, Headingley.
24	Henderson, Rev. W. G., D.C.L. .	Grammar School.

44	Hepper, Mrs. J. H.	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S.	North Hill Road, Headingley
36	Hudson, Henry	Oakwood, Roundhay.
37	Hudson, Robert John	The Poplars, Woodlesford.
120	Ingham, Samuel	Headingley Hall.
96	Jepson, Edward George	20, Springfield Mount.
39	Jowitt, Robert Benson	Elmhirst, Potternewton.
40	Joy, Alfred Lomas	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorn	Cardigan House, Headingley.
47	Kitson, James, Jun.	Spring Bank, Headingley.
48	Kitson, Mrs.	Burley Hill, Leeds.
90	Lawson, Frederick William	
50	Leather, J. Towlerton	Leventhorpe Hall, Leeds.
53	Lupton, Arthur	Headingley Hill.
95	Lupton, Arthur Greenhow	Wellington Street.
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	Lupton, John	Moorlands, Headingley.
56	Lupton, Darnton	The Harehills, Roundhay Road.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares)	Wellington Street.
88	McGuire, Thomas	Grosvenor Villa, Grosvenor Road, Headingley.
94	Malcolm, John Cooper	Brighton Villa, New Leeds.
59	Margerison, J. L.	4, Porchester Gate, Bayswater Road, London.
25	Marsden, Mrs. H. R.	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A.	Headingley Lodge.
72	Marshall, John	Church Institute.
62	Marshall, Stephen Albert, B.A.	Weetwood Hall.
27	Maude, Edmund	Middleton Lodge, Beeston.
117	Middleton, Arthur	Hawk Hills, Chapel-Allerton.
29*	Milner, Henry B. W.	
64	Nickols, Richard	Hill Top, Bramley.

65, 66	Nicholson, Albert H. (2 shares) .	
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28*	Passavant, P. W. .	
93	Pebody, Charles .	23, Albion Street.
11	Price, William Nicholson	Mount Pleasant.
38	Ralph, John, M.A. .	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John .	Park Row.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, Edward .	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M. .	
57	Stringer, John William .	Inglebank, Far Headingley.
73	Teale, T. Pridgin, M.A., F.R.C.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert (P) .	45, Portland Place, London, W.
76	Tennant, Thomas .	21, Blenheim Terrace.
78*	Tetley, F. W. .	
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall .	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William .	28, Albion Street.
111	Watson, William Henry .	Horsforth.
97	Weston, Edward .	4, Woodland Grove, New Leeds.
42	Whiting, John .	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William .	St. Mary's Mount, Newton Hill.
85	Wilson, John .	Seacroft Hall.
17	Wilson, Richard .	Commercial Street.
35	Wood, Richard .	Newton Villa, Potternewton.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

2	Atkinson, J. H.	12, East Parade.
6	Croft, Samuel	Gledhow.
7	Garlick, William	6, Hyde Terrace.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A.	Meanwood.
35	Armstrong, Prof. G. F., M.A.	Vold House, Clarendon Road.
2	Baines, Edward Manwaring	Rosemount, North Hill Road, Headingley.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Burley View.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
8	Bolland, W. T.	West Wood Mount, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
12	Carbutt, E. H., M.P.	19, Hyde Park Gardens, London, W.
13*	Carter, Robert Meek	
14	Corson, George	Wood Lane, Headingley.
26	Davey, Henry	Rupert Lodge, Headingley.
16	Denny, T. G.	Hyde Park.
19	Eddison, Frederick	The Manor, Adel.

20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
23	Ford, T. B. P.	Bentham, near Lancaster.
69	Fraser, James B.	44, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A.	30, Hyde Terrace.
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Crown Chemical Works, Crown Street.
81	Holroyd, James	4, College Road.
29	Holt, Henry Percy, C.E., F.G.S.	Fairlea, Palatine Road, Didsbury, Manchester.
30	Holt, Joseph (P)	Ogbeare Hall, Holsworthy, Devon.
31	Illingworth, William	Roundhay Grove.
32*	Irwin, Edwin	
33	Irwell, Julius	Highfield House, Headingley.
67	Jefferson, Peter	6, De Grey Terrace.
37	Kemplay, Miss	Providence Lodge, Claypit Lane.
86*	Lambert, Joseph	
38	Lawson, Thomas	Newton Hill, Potternewton.
39*	Lawson, John	The Manor, Bramhope, Otley.
41	Ledgard, Mrs.	Eller Close, Roundhay.
88	Legard, Albert G., M.A.	Grosvenor Terrace, Headingley.
44*	McCheane, Rev. J. H., M.A.	
43	Manning, H. J.	
40	Marshall, Prof. John, M.A.	6, Spring Road, Headingley.
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Otley Road, Headingley.
47	Morley, Herbert Ogle	
48	Myers, William Beswick	13, Park Square.
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.

51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Chapeltown Road.
9	Reid, T. Wemyss	Cardigan Road.
62	Riley, H. W.	King Street.
73	Rowley, Walter, C.E., F.G.S.	Alder Hill, Meanwood.
65	Rücker, Prof. A. W., M.A.	Claremont, Leeds.
66	Sharpe, Miss	21, Victoria Place, Camp Road.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
70	Somers, Francis	47, Briggate.
71	Stables, James	Lane Ends, Horsforth.
74	Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
36	Tennant, John	18, Albion Street.
18*	Thornton, Charles	
76	Thorpe, Prof. T. E., Ph.D., F.R.S.	Oak Bank, Shaw Lane, Headingley.
77	Titley, Anthony	Manor House, Victoria Grove, Headingley.
78	Titley, T. A.	Oakley House, Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.
82	Walker, H. B.	Heath Cottage, Moortown.
83	Ward, Edmund	Denison Hall, Hanover Square.
57	Ward, George, F.C.S.	Buckingham Terrace, Headingley.
90	Ward, William	15, St. John's Terrace.
84	Whiteley, James T.	Blenheim Square.
85	Wilson, J. J.	Newton Grove.
42	Wilson, Mrs. Richard	Brown's Bank, Commercial Street.
87*	Young, John	

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	Woodhouse Lane.
Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Ambler, T.	9, Park Place.
Anson, G. E.	The Woodlands, Weetwood.
Appleyard, T. W., Jun.	Oak Lea, Cardigan Road, Headingley.
Armistead, Edwin	Albion Street.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	5, Woodhouse Square.
Barling, John	94, Belle Vue Road.
Barran, Charles	3, Mount Terrace, Chapel-Allerton.
Barran, John, Jun.	St. Ann's Grange, Burley.
Barran, A.	Chapel-Allerton Hall.
Barran, Rowland Hirst	Do. do.
Bartholomew, W. H., C.E.	Ridge Way House.
Battle, Walter	The Elms, Chapeltown Road.
Bentfield, Charles	Headingley.
Bentley, Walter	3, Hillary Place, Woodhouse Lane.
Berridge, H. D.	The Grammar School, Leeds.
Bickel, Miss M.	21, Lyddon Terrace.
Birchall, Oswald	Moor Bank, Ilkley.
Blackburn, H. G.	Bank House, Horsforth.
Bland, Miss Mary Jane	Lilford House, Queen Square.
Bodington, Prof. N., M.A.	Yorkshire College.
Bothamley, C. H., F.C.S.	Yorkshire College.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W.	14, Commercial Street.
Brigg, E. Newsome	Troutbeck, Ilkley.
Brigg, Matthew A.	South View, Potternewton.
Brigg, Thomas S.	Cromer Terrace.
Brocklehurst, T. P.	High School, Roundhay.
Brodie, W. L.	14, Royal Exchange Chambers.

Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Bulmer, Charles	Blenheim Lodge.
Butler, Edmund	Kirkstall Forge.
Campbell, Archibald	23, Hyde Terrace.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Chorley, R.	Messrs. McCorquodale & Co., Limited.
Churton, Thomas, M.D.	Park Square.
Clare, W., M.D.	Park Square.
Clark, Miss	Potternewton.
Clemons, G. H.	1, Grosvenor Mount.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.
Conder, Rev. E. R., D.D.	1, Newton Grove, New Leeds.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	67, Sholebroke Avenue, Chapeltown Road.
Crawford, James	Chapel-Allerton.
Croysdale, John	Monk Bridge Road, Headingley.
Dalton, George	The Yews, North Hill Road, Headingley.
Dalton, Thos. Wells	69, Sholebroke Avenue, Chapeltown Road.
Davis, Edward	Milton Lodge, Far Headingley.
Dixon, J. W.	Rose Cottage, Meanwood.
Drake, Dr.	Otley Road, Headingley.
Dufton, Arthur Wellesley	74, Springfield Place.
Eddison, Octavius	70, Albion Street.
Ellis, William H.	Thurnscoe Hall, Rotherham.
Ellison, James Edward	10, De Grey Road.
Exley, William	Cleveland Villa, Shipley.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Flitch, John R.	Chapel-Allerton.
Foster, George	Osmondthorpe.

Gane, Lawrence	East Parade.
Gaskell, George V.	Willow House, Chapeltown Road.
Goodall, Charles	Francis Street, New Leeds.
Goodson, R.	Bedford House, Roundhay.
Gray, T. H.	Brookleigh, Calverley.
Hall, Frederick, M.D.	St. Mark's Villas, Woodhouse Lane.
Hall, Rev. G. Walker	34, Springfield Place.
Hall, William	Moor Lane, Headingley.
Hallilay, John	Burley Road.
Harding, T. W.	St. Ives, Headingley.
Harding, Anthony Robinson	Sefton House, Louis Street, New Leeds.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	30, Hyde Park Terrace,
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hellier, J. B., M.D.	De Grey Terrace.
Hepworth, S. C.	West Park Street, Dewsbury.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Hodgson, Miss	37, Mount Preston.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Holmes, John	Holmstead, Roundhay.
Horsfield, H. K.	Newton Grove.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Ingham, Henry	Heaton Lodge, Wortley.
Jackson, Richard	Commercial Street.
Jackson, Miss	15, Eldon Place.
Jefferson, J. S.	15, York Place.
Jessop, G. W.	Hall Royd, Shipley.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, W. D.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.

Josephy, Henry	5, Beech Grove Terrace.
Jowett, Miss H. H.	93, Caledonian Road.
Jowitt, Miss	Woodfield, Newton Hill.
Joy, A. B.	Ilkley Wells Brewery.
Joy, W. Lomas	Weetwood Mount.
Kettlewell, C. B.	38, Commercial Street.
Lambert, William	Oakfield, Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove Hall.
Laycock, Rev. J. A.	2, Eton Terrace, Harrogate.
Lee, John	49, Briggate.
Lupton, Arnold, M.I.C.E.	4, Albion Place.
Lupton, William W.	Newton Hill.
Mathers, John S.	Hanover House.
Matterson, Miss	Cavendish House, Cavendish Road.
Maude, Miss	Knowsthorpe House.
May, Rev. T. H., M.A.	Albert Villas, Clarendon Road.
Megson, J. C.	Spencer Place, New Leeds.
Meredith, S. R.	14, Park Place.
Meyer, Adolf	2, Brandon Villas, Chapeltown Road.
Middleton, William	Acacia, Roundhay.
Morrison, G. W.	Town Hall, Leeds.
Motley, Francis	Mount Pleasant.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Burley Road.
Newstead, J. S.	Woodville, Horsforth.
Oates, C. G.	Meanwoodside.
Palethorpe, Henry	2, Wesley Place, Headingley.
Pawson, John Edward	Lawns House, Farnley, near Leeds.
Payne, E. S.	6, Crimbles Street, Camp Road.
Pearson, John Thomas	Moor House, Far Headingley.
Pepper, J. E.	7, Cromer Terrace.
Pickles, J. J.	66, Camp Road.
Powell, William	13, Park Place.
Ransome, Prof. Cyril, M.A.	Ash Grove, Victoria Road.
Reffitt, J. W.	5, Victoria Terrace, Belle Vue Road.

Rhodes, John H.	27, Park Square.
Richardson, W. W.	Alma Road, Headingley.
Rider, James	Pease's Buildings.
Roberts, Rev. R.	Church View, Kirkstall.
Robinson, Thomas	The Manor House, Farnley.
Robinson, Edmund	42, Park Square.
Robson, A. W. M.	Hillary Place.
Rooke, Charles S.	Newton Hill, Potternewton.
Ryder, Charles	Westfield, Chapeltown.
Scatcherd, Oliver	Virginia Road.
Shackleton, Joseph	West House, New Wortley.
Shackleton, Thomas	1, Headingley Terrace.
Shaw, Mrs.	St. Mark's Villa.
Simpson, James T.	4, Blenheim Terrace.
Simpson, James T.	9, Blenheim Terrace.
Slade, Robert	14, Springfield Mount.
Smeeton, Wm.	Commercial Street.
Smeeton, Miss E.	Newton Hill.
Snowdon, Henry	Ridge House, Leeds.
Spark, F. R.	29, Hyde Terrace.
Spurge, C., B.A.	Yorkshire College.
Stables, Ashley	Horsforth.
Tannett, Mrs.	Burton Crescent, Shaw Lane.
Taylor, Mrs. M.	28, Clarendon Road.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Vincent T.	Belle Vue Road.
Thompson, Rev. J.	Vicarage, Hunslet.
Thompson, Miss	St. Mark's Villas.
Thrippleton, John	2, Evaline Terrace, Burley, Leeds.
Tiffany, George John	17, Grove Terrace.
Turner, Joseph	Spencer Place, New Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, Edward	Elmwood Place.
Walker, Francis	Do.
Walker, Henry	Oak House, Headingley.
Walker, George	Newton Hill.
Walker, James	Do.

Walker, William	Osmondthorpe Hall.
Ward, John	Moor Allerton House.
Ward, Richard	22, Mount Preston.
Watson, Charles	Burton Grange, Far Headingley.
Webb, Robert, M.A.	Grammar School.
Wheelhouse, C. G., F.R.C.S.	Hillary Place.
Whitehead, John	Newstead House, Spencer Place, New Leeds.
Whitham, Thomas	Bramhope, Otley.
Willans, J. W.	Beech Holme, Burley.
Woodall, H.	17, Ashwood Villas.
Wright, Charles James	Lynton Villa, Virginia Road.
Wright, Howard	29, Leopold Street.
Yewdall, Edwin	40, Wade Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Abbott, Mrs. J.	Woodhouse Lane.
Acton, Miss	4, Blenheim Terrace.
Albrecht, Mrs. M.	Bleak House, Headingley.
Ambler, Mrs. T.	9, Park Place.
Anson, Miss F. G.	The Woodlands, Weetwood.
Atkinson, Mrs. E.	Eldon House, Woodhouse Lane.
Atkinson, Miss Emily	Clarendon Road.
Atkinson, Miss Eleanor S.	Do.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Mrs. John, Jun.	St. Ann's Grange, Burley.
Barran, Mrs. Charles	3, Mount Terrace, Chapel-Allerton.
Bartholomew, Mrs.	Ridge Way House.
Battle, Mrs. Walter	The Elms, Chapeltown Road.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Headingley.
Bentley, Mrs. Walter	Hillary Place.
Birchall, Mrs. Oswald	Moor Bank, Ilkley.
Brigg, Miss Mary	South View, Potternewton.

Brigg, Mrs. T. S.	Cromer Terrace.
Bruce, Mrs. W.	Moorland Terrace.
Buckton, Mrs. R.	Wheatfield Lodge, Headingley.
Bulmer, Mrs. Charles	Blenheim Lodge.
Bulmer, Miss Ada	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Campbell, Mrs. A.	23, Hyde Terrace.
Cheetham, Miss E.	Woodbottom Cottage, Horsforth.
Christie, William N.	Southend House, Headingley.
Clare, Mrs.	Do.
Clemons, Mrs. G. H.	1, Grosvenor Mount.
Coates, Mrs. J. I.	Southend House, Headingley.
Connon, Mrs. J. W.	Park Row.
Cooke, Mrs. W.	Moorfield House, Moor-Allerton.
Crampton, Mrs. W. T.	67, Sholebroke Avenue, Chapeltown Road.
Crampton, Miss	Do.
Crawford, Mrs. James	Chapel-Allerton.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Monk Bridge Road, Headingley.
Dalton, Mrs. G.	The Yews, North Hill Road, Headingley.
Davis, Mrs. E.	Milton Lodge, Far Headingley.
Dixon, Miss	Rose Cottage, Meanwood.
Dixon, Miss Clara	Do. Do.
Ellison, Miss	10, De Grey Road.
Evans, Mrs.	Inglebank, Far Headingley.
Fairley, Mrs. T.	8, Newton Grove.
Filliter, Miss	West Mount, Clarendon Road.
Flitch, Mrs. J. R.	Chapel-Allerton.
Fretwell, Miss	30, Hyde Park Terrace.
Garlick, Miss	6, Hyde Terrace.
Gaskell, Mrs.	Willow House, Chapeltown Road.
Goodson, Mrs. R.	Bedford House, Roundhay.
Goodson, Miss	Do. Do.
Goodson, A.	Do. Do.
Gray, Mrs. T. H.	Brookleigh, Calverley.

Hall, Mrs. F.	St. Mark's Villas, Woodhouse Lane.
Hall, Mrs. W.	Headingley.
Hallilay, Mrs.	28, Burley Road.
Hallilay, Richard Percy	Do.
Harding, Mrs. A. R.	Sefton House, Louis Street, New Leeds.
Hebblethwaite, Miss S.	12, Blenheim Terrace.
Hepper, Miss	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirst, Mrs. J. A.	Adel.
Hogg, Mrs Henry	29, Blenheim Terrace.
Holgate, Mrs. B.	3, Atkinson Street, Hunslet.
Holmes, Mrs. John	Holmstead, Roundhay.
Holroyd, Mrs.	4, College Road.
Holroyd, Miss	Do.
Holroyd, Miss Jane	Do.
Horsfield, Miss	Newton Grove.
Horsfield, F.	Do.
Ingham, Jas. Curtis	Heaton Lodge, Wortley.
Ingham, Miss	Do. Do.
Jackson, Mrs. R.	Commercial Street.
Jefferson, Miss	15, York Place.
Jefferson, Miss M.	Do.
Jennings, Mrs.	Cavendish House, Cavendish Road.
Jessop, Mrs. T. R.	32, Park Square.
Johnston, Miss M. N.	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Jowett, Miss Clara	93, Caledonian Road.
Jowitt, Miss E. M.	Woodfield, Newton Hill.
Jowitt, Miss F.	Harehills Grove, Leeds.
Joy, Mrs. Lomas	Weetwood Mount.
Joy, Miss	Do.
Kettlewell, Miss E.	38, Commercial Street.
Kettlewell, Miss F. A.	Do.

Lambert, Arthur	Oakfield, Headingley.
Lawson, Miss	Bramhope.
Ledgard, Miss	Eller Close, Roundhay.
Lister, Miss	Highfield House, Headingley.
Malcolm, Mrs. J. C.	Brighton Villa, New Leeds.
Mathers, Mrs. J. S.	Hanover House.
Megson, Albert	Spencer Place, New Leeds.
Meredith, Mrs. S. R.	14, Park Place.
Middleton, Mrs. W.	Acacia, Roundhay.
Motley, Mrs. F.	Mount Pleasant.
Motley, L.	Do.
Myers, Miss	Cavendish House.
Myers, Miss	Grove House, Roundhay.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, P.	St. John's Cottage, St. John's Road.
Nelson, Miss C. E.	Do. Do.
Nelson, Miss Louisa	Do. Do.
Newstead, Mrs. J. S.	Woodville, Horsforth.
Nussey, Miss	Springville, Shaw Lane, Headingley.
Nussey, Miss M.	Do. Do.
Passavant, Miss	De la Haye House, Chapeltown Rd.
Passavant, Miss L. M.	Do. Do.
Passavant, Miss Alice	Do. Do.
Pearson, Mrs. J. T.	Moor House, Headingley.
Pepper, Mrs. J. E.	7, Cromer Terrace.
Pepperell, Miss	Manor House, Farnley.
Pickles, Mrs. J. J.	66, Camp Road.
Ralls, Miss	Lilford House, Queen Square.
Ralph, Mrs. John	Lifton House.
Redmayne, Mrs. John	39, Sholebroke Avenue, Chapeltown Road.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Reynolds, Miss F. M.	Do. Do.
Richardson, Miss	Alma Road, Headingley.
Richardson, Miss Lilly	Do. Do.
Rider, Mrs. J.	Harrogate.
Robinson, Miss	The Manor House, Farnley.

Robinson, Mrs. E.	Park Square.
Rooke, Miss	Newton Hill, Potternewton.
Rooke, Miss E. M.	Do. Do.
Russell, Miss	Ridge Way House, Headingley.
Ryder, C. F.	Westfield, Chapeltown,
Ryder, Miss E. I.	Do. Do.
Ryder, Miss Mary	Do. Do.
Ryder, Miss Louisa	Do. Do.
Scatcherd, Mrs. O.	Virginia Road.
Scattergood, Miss	Park Square.
Shackleton, Miss	1, Headingley Terrace.
Shaw, Miss	St. Mark's Villa.
Simpson, Miss F.	9, Blenheim Terrace.
Simpson, John	Do. Do.
Slade, Mrs. R.	14, Springfield Mount.
Smeeton, Mrs. W.	Commercial Street.
Smeeton, C. W.	Do.
Smeeton, Miss Alice	Do.
Smith, Miss Farrar	Hope Villa, Woodhouse Lane.
Somers, R. M.	Fountain Terrace.
Spark, Mrs. F. R.	29, Hyde Terrace.
Spark, Miss	Do.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Tatham, Miss G.	Springfield Mount.
Taylor, Miss J.	28, Clarendon Road.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. Do.
Teale, Michael	Do. Do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thompson, Mrs. V.	Belle Vue Road.
Thompson, Miss E.	St. Mark's Villas.
Turner, Mrs. J.	Spencer Place, New Leeds.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss	Elmwood Place.
Walker, Miss B.	Do.
Walker, Miss J.	Do.

Walker, Miss M. I.	Newton Hill.
Walker, Miss M. H.	Do.
Walker, Miss E. H.	Do.
Walker, Mrs. William	Osmondthorpe Hall.
Walker, Miss Florence	Do. Do.
Walker, Miss Adeline	Do. Do.
Walker, Herbert	Do. Do.
Ward, Mrs. G.	Buckingham Terrace, Headingley.
Ward, Mrs. John	Moor-Allerton House.
Ward, Mrs. Richard	22, Mount Preston.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Wheelhouse, Mrs. C. G.	Hillary Place.
Whitehead, Mrs. J.	Newstead House, Spencer Place, New Leeds.
Whiteley, Mrs. T.	Blenheim Square.
Wilkinson, W. Musgrave	St. Mary's Mount, Newton Hill.
Willans, Mrs.	Beech Holme, Burley.
Wright, Mrs. Howard	29, Leopold Street.
Yewdall, Mrs.	40, Wade Lane.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Spencer F. Baird, M.D., Smithsonian Institution, Washington, United States.

Rev. Canon Barry, D.D., King's College, London.

W. Boyne, F.S.A., 6, Via Garibaldi, Firenze, Italia.

Henry Bowman Brady, F.R.S., Hillfield, Gateshead.

Sir Frederick J. Bramwell, F.R.S., M.Inst.C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia di Brolo, Palermo.

Joseph Burland, South Cave.

Dr. Day, Mendoza, Argentine Republic.

Lewis Llewelyn Dillwyn, M.P., F.L.S., F.G.S., Hendrefoilan, Swansea, Glamorganshire.

The Lord Bishop of Ely, The Palace, Ely.

The Right Hon. the Earl of Enniskillen, LL.D., D.C.L., F.R.S., F.G.S., M.R.I.A.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna, &c., &c.

The Rt. Hon. W. E. Forster, M.P., F.R.S., Burley-in-Wharfedale.

George Lane Fox, Bramham Park.

F. d'A. Furtado, St. Michael's, Azores.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Wm. Hartley, D'Urban, Port Natal.

The Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S.

Capt. James Holt, A.D.C., &c., &c., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec.R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Chas. Nicholson, Bart., D.C.L., &c.

The Right Rev. the Bishop of Nottingham, Leasingham, Sleaford.

Lawrence Oliphant, F.R.S., London.

Richard Owen, M.D., D.C.L., LL.D., F.R.S., Foreign Associate of the Institute of France, &c., British Museum, London.

C. C. Oxley, Minster House, Ripon.

Sir H. S. Parkes, C.B., H.M. Consul-General, Jeddo, Japan.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

The Lord Bishop of Ripon, F.R.S., The Palace, Ripon.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Prof. Gustave Seyffarth, A.M., D.D., Ph.D., 1263, 4th Avenue, New York, U.S.

Col. Edmund Smyth, Welwyn Grange, Hertfordshire.

John Robert Tennant, Kildwick Hall.

Edward Harry Woods, Rosario, in the Argentine Republic.

The Lord Archbishop of York, Bishopthorpe.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

LEEDS

Philosophical & Literary Society

THE ANNUAL REPORT

For 1883-4.

ıe Right Hon. Lord Londe
borough, Londesborough Lodg
Brough; 3, Grosvenor Squa
London, W.

lements R. Markham, C.I
F.R.S., F.L.S., Sec.R.G.S., &
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British Museum, London.

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Ripon.

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sul-General, Jeddo, Japan

FORM OF A

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LEEDS

phical & Literary Society

ANNUAL REPORT

For 1883-4.

Se Le 1

THE

SIXTY-FOURTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1883-4.

Read at the Annual Meeting, May 6th, 1884.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.
MDCCCLXXXIV.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers :—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, Conversazione, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures and Conversazione. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, Lectures, and Conversazione, but not to business meetings; nor have they any transferable tickets to admit visitors :—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-FOURTH SESSION.

The Council have the pleasure to report a diminution of £113 in the debt which had been incurred in preceding years for structural improvements and other necessary alterations in the property of the Society. The amount now due to the bankers is £117 4s. 11d.

For this improvement in the finances the Society is much indebted to the President, Sir John Lubbock, Prof. Bodington, the Rev. C. Hargrove, and Mr. Wm. Morris, whose interesting Lectures were delivered free of charge to the Society; and to Mr. T. Emsley, of Burley-in-Wharfedale, who has continued his annual subscription of £10.

The total number of Members and Subscribers remains practically the same.

	1883.	1884.
Original Proprietary Members (78 shares) ...	72	72
New Proprietary Members (121 shares) ...	98	99
Ordinary Members	7	6
New Ordinary Members	82	83
Annual Subscribers of £1 1s.	189	191
Annual Subscribers of 7s. 6d.	181	178
Total ...	629	629

The Meetings of the Society have fully maintained their interesting and useful character. The Lectures and Papers were as follows :—

1. "Silurian and Devonian Plants." Principal J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal. *Read Oct. 16th*, 1883.
2. "Recent Researches on the Distance of the Earth from the Sun." Prof. R. S. Ball, LL.D., F.R.S., Royal Astronomer of Ireland. *Read Nov. 6th*, 1883.
3. "The Conditions of Life in our Large Towns." J. E. Eddison, M.D., President of the Society. *Read Nov. 20th*, 1883.
4. "Ants." Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., Pres. L.S., F.G.S. *Read Nov. 26th*, 1883.
5. "What is Education ?" Prof. Bonamy Price, M.A. *Read Dec. 17th*, 1883.
6. "Life on the Surface of the Ocean." Prof. H. N. Moseley, M.A., F.R.S. *Read Jan. 15th*, 1884.
7. "Two Centuries of University Life." Prof. N. Bodington, M.A. *Read Jan. 22nd*, 1884.
8. "Poetry and Criticism." Lewis Morris. *Read Feb. 5th*, 1884.
9. "A Visit to Cape Colony." Prof. A. H. Green, M.A., F.G.S. *Read Feb. 19th*, 1884.
10. "The Founders of Fountains Abbey." Rev. C. Hargrove, M.A. *Read March 4th*, 1884.
11. "Pictures of the Year." Henry Blackburn, Editor of "Academy Notes." *Read March 18th*, 1884.
12. "Art and Labour." William Morris. *Read April 1st*, 1884.

The Conversazione was attended by an average number of members and visitors. The rooms were lighted by electricity obtained from a Ferranti dynamo machine on the premises of Messrs. Marsh, Jones and Cribb, who kindly allowed the Society the use of their machine for the evening. The Hall was connected with the dynamo, at a distance of about 300 yards, by means

of overhead wires, an arrangement in which the Council had the courteous co-operation of the National Telephone Company. The objects of interest on exhibition comprised a collection of caricatures, among which were original drawings by John Leech, Chas. Keene, and Du Maurier, "H.B." sketches, and numerous specimens of the work of Bryan, Rowlandson, Gilray, Bunbury, and Heath, and other satirical artists, contributed by Mr. W. H. Bradbury, Mr. G. Du Maurier, Mr. B. Quaritch, Mr. Chas. Hutt, Messrs. Robson and Kerslake, and others. The National Telephone Company, the Yorkshire College, and Messrs. Cuttriss and Co. exhibited electrical apparatus, and Mr. R. A. Hardcastle lent a valuable collection of old Chelsea figures.

The visitors to the Museum during the year numbered 29,412, being 2,544 more than in the year before.

The most important accession to the Museum made during the past year consists of a large and singularly perfect Megalichthys. It is well-known that Agassiz, having previously studied the fossil remains collected by Dr. Hibbert, at Burdiehouse, visited Leeds in 1834, and found in our Museum a magnificent skull with scales similar to those of one of Dr. Hibbert's forms (the other was subsequently described by Owen under the name of Rhizodus). This skull was described and figured in the Poissons Fossiles (vol ii., p. 87, pls. 63, 63a, and 69) and taken by Agassiz as the type of his genus Megalichthys. Since that time various specimens have helped to elucidate the structure of this Carboniferous Ganoid, but many points—more, indeed, than anyone suspected—remained doubtful or unknown. It was therefore with much satis-

faction that the Curator received notice in September last of the discovery of a fine example of Megalichthys at Idle, near Leeds. The fossil was found at Mr. F. B. Ellison's colliery, in the roof of the Halifax Hard Bed. It was extracted with great care and success by the pit-manager, Mr. Andrew Oldroyd. We note with satisfaction that Mr. Oldroyd had previously attended the Yorkshire College for instruction in Coal Mining, and that he accepted from this Society a free admission to a fuller course of study at the College as a recognition of his invaluable service. The fossil was generously presented to our Museum by Mr. Ellison. It shows the whole ventral surface from the tip of the snout to the root of the tail. The under-surface of the head, the pectoral, ventral, and anal fins, besides a remarkable and unsuspected arrangement of pelvic scales, are conspicuous and little disturbed. The total length is 3ft. 8½in. A full description was recently given to the Geological Society, and will shortly appear, with illustrative figures, in the Society's Journal. It is satisfactory to know that Leeds possesses by far the finest specimens of this interesting fossil.

At the close of the late Fisheries Exhibition, Mr. Aldam, of Frickley Hall, near Doncaster, instructed the Curator to look out for possible purchases suitable either for the Museum or the Yorkshire College, and placed £30 in his hands for expenditure at the Exhibition or elsewhere. By this generous gift the Museum gains some important desiderata, especially a Ceratodus and some new and fine Echinodermata.

The family of the late J. O. Butler, Esq., of Kirkstall

have presented a large collection of relics from the Abbey, including many glazed tiles, small objects in metal, and other antiques. The collection illustrates many details of domestic life in old times, and will be carefully preserved as peculiarly appropriate to a Leeds Museum.

Among other donations enumerated in the full list appended to this Report, we have specially to notice a large series of varieties of Helix nemoralis, hortensis, and arbustorum, presented by Mr. S. Cordukes, of Knottingley, casts of ancient stone-carvings from Rothwell Church, presented by Mr. John Batty, and a large number of fossils from the Lower Oolite, presented by Mr. W. C. Lucy, of Brookthorpe, Gloucester.

During the year the Archæological and Industrial Museums have been thoroughly cleaned and in part re-arranged. The coal fossils have been re-named in accordance with suggestions from Prof. W. C. Williamson, F.R.S. One result is the grouping together of many supposed species under a few common names, and the abolition of distinctions long regarded as valid. A fine fruiting branch of Lepidodendron, in the Society's possession, has been photographed for Prof. Williamson, and illustrates Part XII. of his "Memoirs on the Organization of the Fossil Plants of the Coal Measures" (Phil. Trans., 1883, pt. II., p. 468, pl. 34.)

Special collections to illustrate the classification and transformations of insects have been long in hand, and owing to the difficulty of obtaining certain examples, will probably remain incomplete for some time to come. Two large cases are, however, sufficiently advanced for

exhibition in the Museum ; they indicate the plan of the whole arrangement, and will prove, it is hoped, a popular and instructive feature.

The transformations of the following Lepidoptera were gone through last summer in a temporary case arranged for public display :—Small tortoise-shell butterfly (*Vanessa urticæ*), peacock butterfly (*Vanessa io*), chalk-hill blue (*Lycæna corydon*), eyed hawk moth (*Smerinthus ocellatus*), oak eggar moth (*Bombyx callunæ*), emperor moth (*Saturnia carpini*), gipsy moth (*Liparis dispar*), black arches moth (*Liparis monacha*), great tiger moth (*Arctia caja*), puss moth (*Cerura vinula*), figure 8 moth (*Diloba cœruleocephala*), tree lackey moth (*Bombyx neustria*), December moth (*Hibernia defolaria*), gold tail moth (*Liparis chrysorrhœa*), November thorn moth (*Himera pennaria*), scarlet tiger moth (*Callimorpha dominula*), pale brindled beauty (*Phigalia pilosaria*), *Hibernia progemmaria*, *Operabia dilutata*.

Better provision has been made for the future management of the larvæ and pupæ, and the Curators hope that the exhibition will gain in interest yearly.

The following gentlemen have been elected Honorary Members of the Society :—Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S. ; Prof. Graham Bell; Principal J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Montreal ; Mr. Edward Hailstone, F.S.A. ; and Mr. Henry Seebohm, F.L.S.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1883.

1883.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	40·8 Fah.	29·661	3·745
February	43·8 ,,	29·801	1·990
March	36·6 ,,	29·513	0·520
April	47·2 ,,	29·833	2·850
May	51·8 ,,	29·783	0·910
June	58·5 ,,	29·800	3·420
July	59·0 ,,	29·632	3·250
August	60·9 ,,	29·772	1·780
September	56·0 ,,	29·629	4·150
October...	49·9 ,,	29·743	2·597
November	44·1 ,,	29·583	2·530
December	42·0 ,,	29·919	1·060

The mean monthly temperature was 49·2.

The mean monthly height of the barometer was 29·722 inches.

The total rainfall for the year was 28·802 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 79° on June 6th and 29th; and the minimum 20° on March 10th.

The greatest barometric pressure was on March 3rd, being 30·6 inches, the temperature of the mercury being 56°; the least pressure was on September 2nd, being 28·696 inches, the temperature of the mercury being 65°.

The greatest fall of rain (during 24 hours) was on June 29th, being 1 inch.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1883-4.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1883				0	8	5
,, Annual Subscriptions, viz.—						
73 New Proprietary Members, at 21/-...	76	13	0			
6 Original Ordinary ditto 42/-...	12	12	0			
56 New Ordinary ditto 21/- ..	58	16	0			
124 Annual Subscribers, at 21/-...	130	4	0			
16 New ditto 21/-...	16	16	0			
124 Annual Subscribers, at 7/6...	46	10	0			
20 New ditto 7/6...	7	10	0			
,, Arrears	59	12	6			
				408	13	6
,, Rent, viz.—						
Cellars	54	10	6			
Lecture Room	176	16	6			
				231	7	0
,, Receipts from Visitors to Museum ...	122	11	0			
,, ,, ,, Conversazione...	27	13	6			
				150	4	6
,, Sale of Catalogues				0	10	10
,, Donation from Mr. T. Emsley	10	0	0			
,, Sale of Forfeited Shares	36	0	0			
				46	0	0
,, Balance due to Bank				117	4	8
				£954	8	11

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1883				231	2	10
,, Repairs and Alterations	20	15	7			
,, Rates and Taxes	4	0	6			
,, Fire Insurance	15	0	0			
,, Coals, &c.	18	2	5			
,, Gas	18	3	7			
,, Cleaning	9	12	0			
				85	14	1
,, Salaries	358	3	0			
,, Fee to Auditor	2	2	0			
				360	5	0
,, Collections, viz.—						
Archæological	5	10	7			
Geological	3	13	1			
Zoological	2	14	3			
Library...	25	5	8			
				37	3	7
,, Postages	12	13	2			
,, Advertising and Printing	27	15	8			
,, Lectures	81	18	0			
,, Conversazione Expenses	78	1	8			
,, Collector's Commission	7	14	0			
,, Bankers' Commission...	10	19	0			
,, Sundries	9	17	11			
				228	19	5
,, Furniture				11	3	0
,, Balance in hand				0	1	0
				£954	8	11

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above a correct abstract of the same,

June 20th, 1884.

BEEVERS & SPICE,
CHARTERED ACCOUNTANTS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1883-4.

ARCHÆOLOGY AND ETHNOLOGY AND MISCELLANEOUS.

Coins and Tokens found in the removal of Leeds Old Bridge (1872), viz., Guinea (William III.), three Shillings (George II.), and three Brass Tokens (Leeds, 1666, 1669, 1672)	J. Rawlinson Ford, Esq.
Polynesian War Club	Mr. T. Pollard.
Collection of relics from Kirkstall Abbey, viz., 55 small Tiles, 71 large Tiles, 2 Spoons, 1 Key, 2 Pieces of Keys, Tobacco Pipes, Piece of Glass, Oyster Shells, Silver Penny (Edward IV.), old Lead Piping, Fragments of Pottery	Presented by the family of the late John Octavius Butler, of the Abbey House, Kirkstall.
Casts of Carved Stones (10th–11th Century) in Rothwell Church, near Leeds	Mr. John Batty, Rothwell.
Two photographs of Ancient British Canoe found in draining Giggleswick Tarn (Leeds Museum)	Thomas Brayshaw, Esq., Stockhouse.
Bomb (1 in. thick, 6 in. diameter) burst by freezing	T. R. Clapham, Esq., Austwick Hall.
Canoe from the Niger.....	Mr. Richard Gales, 76, Kirkgate, Leeds.
Leaden Ball (weight 1 lb. 5 oz.) found at the bottom of Cookridge Street, Leeds, 1884. Perhaps a relic of the engagement on Monday, Jan. 23, 1643. See Markham's Life of Fairfax.....	The late Charles Goodall.

GEOLOGY AND PALÆONTOLOGY, &c.

Slab of Magnesian Limestone, with crystalline incrustation from Quarry near Markenfield Hall.....	Rev. J. S. Tute, M.A., Markington.

Specimens of Albertite, a mineral resin, found at Hoy, Orkney, and Strathpeffer, Ross	A. Graham Yooll, Esq., Leith.
Worm-Casts in Sandstone, from Pateley Bridge	Mr. W. Storey, Pateley Bridge.
Specimen of Megalichthys from Roof of Halifax Hard Bed, Idle	F. B. Ellison, Esq., Idle, near Leeds.
Modiola from Haigh Moor Coal, Ossett, Modiola (?) and Avicula (?) from Hard Bed Coal, Idle	Mr. Andrew Oldroyd, Idle.
Clypeus Plottii, Ammonites oxynotus, and Terebratula fimbria, from the Inferior Oolite and lowest Lias of Gloucester	W. C. Lucy, Esq., Brookthorpe, near Gloucester.

ZOOLOGY.

Pied Blackbird, shot at Whitewell, Bolland	C. H. Presgrave, Esq., Leeds.
Series of varieties of Helix nemoralis, H. hortensis and H. arbustorum. A small collection of British and Foreign insects	S. Cordukes, Esq., Knottingley.
Stuffed specimens of Tetrodon and Diodon from India	G. F. Jeffery, Esq., 2, Park Place, Leeds.
Ceratodus Forsteri, Astropecten, Echinus and two other Echinoderms	W. Aldam, Esq., Frickley Hall, Doncaster.
Flying Fish	Mr. F. French, Leeds.
Collection of British Insects, chiefly Lepidoptera, and including Locusts from Leeds and neighbourhood	The Leeds Naturalists' Field Club.
Hairless Mouse, caught at Burmantofts Cemetery, May 4th, 1884	Rev. T. Bell, Burmantofts Cemetery.
Collection of bird-skins, including Blackbird, Starling, Greenfinch, House Sparrow, Hedge Sparrow, Tree Sparrow, Tit-lark, Land Rail, Little Grebe, Chaffinch, Thrush, Field-fare, Common Snipe, Sparrow Hawk, Wild Duck, Rook, Tawny Owl	Leeds Naturalists' Club.
Small Collection of British Shells	

BOTANY.

Herbarium of British Plants	Leeds Naturalists' Field Club.

PUBLICATIONS.

Synopsis methodica Avium et Piscium, by John Ray, 8vo, 1713	The Rev. C. Hargrove, M.A.
Martyn's Abridgment of Memoirs from the Academy of Sciences at Paris, 2 vols., 1742	
Gnomonicks or the Art of Shadows, by M. de Lahire, 8vo, 1680	
Experiments on Colours, by the Hon. R. Boyle, F.R.S., 8vo, 1670	
Philosophical Conversations, or a New System of Physics, by Dr. T. Dale, 3 vols., 8vo, 1731	
Experimenta circa varias Res Naturales, by Francisci Redi, 1685	
Great Trigonometrical Survey of India, Vols. VII., VIII. and IX.	H. M. Government Record Department, India Office.
Compendium of the Tenth Census of the United States, 2 vols, 1880	The Secretary of the Interior.
Commercial Relations of the United States, 1880 and 1881.....	Department of State.
Reports from the Consuls of the United States on the Commerce, &c. of their Consular Districts	
Catalogue of Birds in the British Museum, Vol. VII., by R. Bowdler Sharpe, and Vols. VIII. and IX., by Dr. Hans Gadow, 1883-4	British Museum.
Catalogue of Oriental Coins in the British Museum, Vol. VIII., by S. Lane Poole, 1883	
Catalogue of Romances in the Department of MSS. in British Museum, Vol. I., by H. L. D. Ward, 1883	
Bulletin of the American Museum of Natural History, Vol. I., Nos. 4 and 5	American Museum.
Catalogue of the Reference Department of the Leeds Public Library	Committee of the Leeds Public Library.
List of Animals in the Gardens of the Zoological Society, London, 1883.....	Zoological Society.
Fauna der Gaskohle, part IV., by Dr. A. Fritsch	Purchased.
Memoirs of Dr. Priestley	Purchased.

Quarterly Journal of the Meteorological Society, for 1881-83	H. Davey, Esq.
The Meteorological Record, for 1881-83	
Saturated Steam, the Motive Power in Volcanoes and Earthquakes, by R. A. Peacock, C.E., F.G.S.	Author.
Report and Maps of the Geological Survey of Canada, by Alfred R. C. Selwyn, LL.D., F.R.S., 1880-82	Dr. Selwyn.
On Irish Metric, by Prof. R. Atkinson, M.A., LL.D.....	Author.
Acadian Geology, by Dr. J. W. Dawson	The Author.
Memoir of Dr. J. D. Heaton	Mrs. Heaton.
Priestley's Lectures on History and General Policy, 2 vols., 1793	Purchased.
Die Silurischen Etagen im Kristianiagebiet, von W. C. Brögger.....	The Royal University of Norway, Christiania.
Silurfossiler og Bergensskifrene af Hans. H. Reusch.....	
Vaextlivet i Norge, af Dr. F. C. Schübeler	
Krystallographisk—Chemiske Undersögelser of Th. Hiortdahl	
Die Anämie, von S. Laache	
Enumeratio Insectorum Norvegicorum, fas. V., edidit J. S. Schneider	
Beretning om Skolevæsenets Tilstand i Kongeriget Norge, for 1876, 1877-78	
Statistik over Norges Fiskerier i aaret, 1876-78	
Etudes sur les Mouvements de l' Atmosphère par Guldberg et Mohn	
Classification der Flächen nach der Transformations gruppe ihrer Geodatischen Curven, von S. Lie	
Tabeller vedkommende Norges Fiskerier i aaret, 1879.....	

PERIODICALS.

WEEKLY.

Nature	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly)	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.
Quarterly Journal of Meteorological Society	H. Davey, Esq.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien.....	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year).	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.

Proceedings of the Royal Society of Edinburgh ..... Transactions of do.	Royal Society of Edinburgh.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar .... Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar .... Bihang till Kongliga Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham.....	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society .... Annual Report of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.A.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History .... Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute..... ...	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club...	Warwickshire Naturalists' and Archæologists' Field Club.

Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College.....	The College.
Annual Report of Harvard University...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales	The Department, New South Wales.
Proceedings of the Royal Society.....	Royal Society.
Smithsonian Miscellaneous Collection... " Contributions to Knowledge Report of the Smithsonian Institution...	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do.	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Geological Record	Purchased.
Proceedings of the Royal Institution (2 pts. a year)	Royal Institution of Great Britain and Ireland.

Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April)	Zoological Society.
Edinburgh Astronomical Observations	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgements of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.A.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Proceedings of the Yorkshire Geological and Polytechnic Society..... ...	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences..... ..	Davenport Academy of Natural Sciences, Iowa, U.S.A.
Report of the Middlesex Hospital	The Hospital.
Calendar and Annual Report of the Yorkshire College	The College.
Annual Report and Publications of the Manitoba Historical and Scientific Society	Manitoba Historical and Scientific Society.
Transactions of the Yorkshire Naturalists' Union	

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1884-5.

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4	Arthington, Robert	Headingley.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Bond End, Knaresborough.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
9	Broadhead, Wm. Henry	31, Sholebroke Avenue, Chapeltown Road.
11	*Brown, James	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
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16	Chorley, Mrs.	9, Cavendish Road.
17	Clapham, Samuel	Warwick Villas.
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21	Cudworth, John W.	43, Mount Preston.
22	Denison, William Beckett	Nun-Appleton, York.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.

26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	7, High Street, Hull.
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29	Ford, Mrs.	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares)	Woodsley House.
36-8	Gott, William Henry (3 shares)	Armley House.
61	Greenhow, Wm. T.	Newton Cottage, Chapel-Allerton.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street.
41	Heaps, Charles Denison	Avenue House, Woodhouse Lane.
42	Heaton, Beresford Rimington	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	5, Blenheim Terrace.
48*	Ingham, William	
49	Jowitt, John	Harehills, Potternewton.
51	Kinnear, Thomas John, M.A.	The Abbey, Malton.
55	Luccock, John Darnton	54, North Street.
32	Lupton, Edward Basil	Moorlands, Headingley.
57*	Lupton, Francis	
53	Lupton, Francis Martineau, M.A.	Wellington Street.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
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77	Marsh, John Jenks	Cressy House, Woodsley Road.
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67	Marshall, Victor Alexander Ernest, B.A.	Monk Coniston, Ambleside.
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43	Nelson, George Hird	Denison Hall.
68	Nunneley, J. A., M.B.	22, Park Place.
69	Rhodes, John	Potternewton House.
70	Shepherd, John	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George	Springfield Mount.
52	Taylor, Benjamin	160, Briggate.
50	Taylor, John Charles	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs.	
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler	Belvidere, Newton Road.
75	Walker, Edward	32, Springfield Mount.
76	Ward, William Sykes, F.C.S.	Denison Hall, Hanover Square.
12	Wilson, Rev. Benjamin	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund	8, Osborne Terrace, Virginia Road.

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WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

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116	Baines, Frederick	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
91	Bedford, James	Woodhouse Cliff.

15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
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8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	West Wood, Scarborough.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William . .	Arksey, Doncaster.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
19	Fairbairn, Sir Andrew, M.A., M.P. .	Askham Richard, near York.
20*	Farrer, James .	
105*	Ferguson, William .	
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15,	Gott, Wm. Henry (P) (10 shares) .	Armley House.
22	Hargrave, Charles .	Oxley Hill, Moor-Allerton.
23*	Hargrave, James .	
7	Hargrove, Rev. Charles, M.A. .	8, Montpelier Terrace.
16	Harvey, William .	West View, North Hill Road.
81	Hatch, S. C. .	Oak Lodge, Headingley.
24	Henderson, Very Rev. W. G., D.C.L. .	The Deanery, Carlisle.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	North Hill Road, Headingley.
36	Hudson, Henry .	Oakwood, Roundhay.
120	Ingham, Samuel .	Headingley Hall.

96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhirst, Potternewton.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James .	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorn .	Cardigan House, Headingley.
47	Kitson, James, Jun. .	Spring Bank, Headingley.
48	Kitson, Mrs. .	Burley Hill, Leeds.
90	Lawson, Frederick William	
50	Leather, J. Towlerton .	Leventhorpe Hall, Leeds.
53	Lupton, Arthur . .	Headingley Hill.
95	Lupton, Arthur Greenhow	Wellington Street.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, Darnton .	The Harehills, Roundhay Road.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares)	Wellington Street.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Road, Headingley.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
72	Marshall, John, F.R.A.S.	Church Institute.
62	Marshall, Stephen Albert, B.A. .	Weetwood Hall.
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117	Middleton, Arthur .	Hawk Hills, Chapel-Allerton.
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64	Nickols, Richard .	Hill Top, Bramley.
65, 66	Nicholson, Albert H. (2 shares) .	
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68	Oxley, Henry .	Weetwood.
28*	Passavant, P. W. .	
82	Pearson, John Thomas .	Moor House, Far Headingley.
93	Pebody, Charles .	23, Albion Street.

11	Price, William Nicholson	Mount Pleasant.
38	Ralph, John, M.A.	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John	Park Row.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, Edward	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M.	
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. Pridgin, M.A., F.R.C.S.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
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76	Tennant, Thomas	21, Blenheim Terrace.
78*	Tetley, F. W.	
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall	Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
71	Ward, John	Moor-Allerton House.
111	Watson, William Henry	Horsforth.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William Musgrave	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
17	Wilson, Richard	Commercial Street.
35	Wood, Richard	Newton Villa, Potternewton.

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7	Garlick, William	6, Hyde Terrace.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

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35	Armstrong, Prof. G. F., M.A.	Vold House, Clarendon Road.
2	Baines, Edward Manwaring	Rosemount, North Hill Road, Headingley.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Burley View.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T.	Meanwood Park.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George	Blackman Lane.
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75	Brunton, George	Hillary Mount, Woodhouse Lane.
12	Carbutt, E. H., M.P.	19, Hyde Park Gardens, London, W.
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14	Corson, George	Wood Lane, Headingley.
36	Davey, Henry	Rupert Lodge, Headingley.
16	Denny, T. G.	2, Moor View, Hyde Park.
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20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
48	Fraser, Henry John	Fairlea, Wood Lane, Headingley.
69	Fraser, James B.	44, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.

25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A.	30, Hyde Terrace.
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Crown Chemical Works, Crown Street.
81	Holroyd, James	4, College Road.
29	Holt, Henry Percy, C.E., F.G.S.	Fairlea, Palatine Road, Didsbury, Manchester.
30	Holt, Joseph (P)	Ogbeare Hall, Holsworthy, Devon.
31	Illingworth, William	Roundhay Grove.
32*	Irwin, Edwin	
33	Irwell, Julius	Highfield House, Headingley.
67	Jefferson, Peter	15, Kensington Terrace.
37	Kemplay, Miss	Providence Lodge, Claypit Lane.
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38	Lawson, Thomas	Newton Hill, Potternewton.
39*	Lawson, John	
41	Ledgard, Mrs.	Eller Close, Roundhay.
88	Legard, Albert G., M.A.	Grosvenor Terrace, Headingley.
23	Lupton, Arnold, M.I.C.E.	4, Albion Place.
44*	McCheane, Rev. J. H., M.A.	
43	Manning, H. J.	
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Otley Road, Headingley.
47	Morley, Herbert Ogle	
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
59	Ramsbotham, S. H., M.D.	16, Park Place.

60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Chapeltown Road.
9	Reid, T. Wemyss	Cardigan Road.
62	Riley, H. W.	King Street.
73	Rowley, Walter, C.E., F.G.S.	Alder Hill, Meanwood.
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68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
70	Somers, Francis	47, Briggate.
71	Stables, James	Lane Ends, Horsforth.
74	Temple, Rev. Henry, M.A.	Oswaldkirk Rectory, Yorkshire.
36	Tennant, John	18, Albion Street.
18*	Thornton, Charles	
76	Thorpe, Prof. T. E., Ph.D., F.R.S.	Oak Bank, Shaw Lane, Headingley.
77	Titley, Mrs. Anthony	Manor House, Victoria Grove, Headingley.
78	Titley, T. A.	Oakley House, Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.
82	Walker, H. B.	Heath Cottage, Moortown.
83	Ward, Edmund	Denison Hall, Hanover Square.
57	Ward, George, F.C.S.	Buckingham Terrace, Headingley.
90	Ward, William	32, Hyde Terrace.
84	Whiteley, James T.	Blenheim Square.
85	Willson, J. J.	Hollyroyd, Moor-Allerton.
42	Wilson, Mrs. Richard	Brown's Bank, Commercial Street.
87*	Young, John	

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Albrecht, Martin	Bleak House, Headingley.
Ambler, T.	9, Park Place.
Anson, G. E.	The Woodlands, Weetwood.

Appleyard, T. W., Jun.	Oak Lea, Cardigan Road.
Armistead, Edwin	Albion Street.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	5, Woodhouse Square.
Barran, Charles	3, Mount Terrace, Chapel-Allerton.
Barran, John, Jun.	St. Ann's Grange, Burley.
Barran, A.	Clarendon Road.
Barran, Rowland Hirst	Chapel-Allerton Hall.
Barrs, A. G., M.D.	22, Park Place.
Bartholomew, W. H., C.E.	Ridge Way House.
Battle, Walter	The Elms, Chapeltown Road.
Bentfield, Charles	Shaw Lane, Headingley.
Berridge, H. D.	The Grammar School, Leeds.
Birchall, Oswald	Moor Bank, Ilkley.
Blackburn, H. G.	7, Richmond Road, Headingley.
Bland, Miss Mary Jane	Lilford House, Queen Square.
Bothamley, C. H., F.C.S.	Yorkshire College.
Bottomley, Herbert	Woodleigh Hall, Rawdon.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	14, Commercial Street.
Brigg, E. Newsom	The Wells House, Ilkley.
Brigg, Matthew A.	South View, Potternewton.
Brigg, Thomas S.	Cromer Terrace.
Brocklehurst, T. P.	High School, Roundhay.
Brodie, W. L.	Royal Exchange.
Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Bulmer, Charles	Blenheim Lodge.
Butler, Edmund	Kirkstall Forge.
Campbell, Archibald	23, Hyde Terrace.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Child, Thomas	84, Wellington Road.
Chorley, R.	Messrs. McCorquodale & Co. Limited, Leeds.

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Clare, W., M.D.	Do.
Clark, Miss	Potternewton.
Clarke, Charles Henry	Newton House, Spencer Place, New Leeds.
Clemons, G. H.	1, Grosvenor Mount.
Coates, James Irwin, B.A., F.R.A.S.	Southend, Headingley.
Conder, Rev. E. R., D.D.	1, Newton Grove, New Leeds.
Connon, J. W.	Park Square.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	67, Sholebroke Avenue, Chapeltown Road.
Crawford, James	Chapel-Allerton.
Croysdale, John	Monk Bridge Road, Headingley.
Dalton, George	The Yews, North Hill Road, Headingley.
Davis, Edward	Milton Lodge, Far Headingley.
Dixon, H.	Rose Cottage, Meanwood.
Drake, Dr. F. H.	Otley Road, Headingley.
Dufton, Arthur Wellesley	74, Springfield Place.
Eddison, Octavius	70, Albion Street.
Ellis, William H.	Thurnscoe Hall, Rotherham.
Ellison, James Edward	10, De Grey Road.
Exley, William	Cleveland Villa, Shipley.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Flitch, John R.	Chapel-Allerton.
Foster, George	Osmondthorpe.
Gane, Lawrence	East Parade.
Gaskell, George V.	Willow House, Chapeltown Road.
Goodson, R.	Bedford House, Roundhay.
Gray, T. H.	Brookleigh, Calverley.
Green, W. Penrose	Asket Hill, Roundhay.
Hall, Frederick, M.D.	St. Mark's Villas, Woodhouse Lane.
Hall, Rev. G. Walker	34, Springfield Place.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.

Hardcastle, C. D.	31, Victoria Place, Camp Road.
Harding, T. W.	St. Ives, Headingley.
Harding, Anthony Robinson	Sefton House, Louis Street, New Leeds.
Hartley, Joseph, LL.D.	10, Park Square.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	Blenheim Terrace.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A.	31, Commercial Street.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hellier, J. B., M.D.	De Grey Terrace.
Hepworth, S. C.	West Park Street, Dewsbury.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Hodgson, Miss	37, Mount Preston.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Holmes, John	Holmstead, Roundhay.
Humble, Frederick	Adel.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Jackson, Richard	Commercial Street.
Jefferson, J. S.	15, York Place.
Jessop, G. W.	Woodcliffe, Rawdon.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, F. W.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Jowitt, Miss	Woodfield, Newton Hill.
Joy, W. Lomas	Weetwood Mount.
Kettlewell, C. B.	38, Commercial Street.
Lambert, William	Oakfield, Headingley.
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Lee, John	49, Briggate.

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Megson, J. C.	Spencer Place, New Leeds.
Middleton, William	Acacia, Roundhay.
Moore, Edwin	50, Cowper Street, New Leeds.
Morrison, G. W.	Town Hall, Leeds.
Motley, Francis	Mount Pleasant.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton House, Chapeltown.
Neill, William	20, Woodbine Place.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
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Palethorpe, Henry	2, Wesley Place, Headingley.
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Pickles, J. J.	66, Camp Road.
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Rhodes, John H.	27, Park Square.
Richardson, W. W.	Alma Road, Headingley.
Rider, James	Pease's Buildings.
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Robson, A. W. M.	Hillary Place.
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Ryder, Charles	Westfield, Chapeltown.
Scatcherd, Oliver	Virginia Road.
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Shackleton, Thomas	1, Headingley Terrace.
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Simpson, James T.	9, Blenheim Terrace.
Slade, Robert	14, Springfield Mount.
Smeeton, Wm.	15, Reginald Terrace, Chapeltown Road.
Smeeton, Miss E.	Newton Hill.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Snowdon, Henry	Ridge House, Leeds.
Spark, F. R.	29, Hyde Terrace.
Spurge, C., B.A.	Yorkshire College.
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Tannett, Mrs.	Burton Crescent, Shaw Lane.
Taylor, Mrs. M.	28, Clarendon Road.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Vincent T.	Belle Vue Road.
Thompson, Rev. J.	Vicarage, Hunslet.
Thompson, Miss	St. Mark's Villas.
Thrippleton, John	2, Evaline Terrace, Burley, Leeds.
Tiffany, George John	17, Grove Terrace.
Turner, Joseph	Spencer Place, New Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, Edward	Elmwood Place.
Walker, Francis	Do.
Walker, James	Newton Park.
Walker, George	Do.
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Ward, Richard	22, Mount Preston.
Ward, Seth	Fairfields, Dewsbury.
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Woodall, H.	17, Ashwood Villas.
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Hepper, Miss	Clareville, Headingley.
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Hogg, Mrs. Henry	Mr. Hartley, 29, Blenheim Terrace.
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Holroyd, Miss Jane	Do.
Humble, Miss Alice	Adel.
Humble, Miss Emily	Do.
Humble, Miss Laura	Do.
Jackson, Mrs. R.	Commercial Street.
Jefferson, Miss	15, York Place.
Jefferson, Miss M.	Do.
Jennings, Mrs.	Cavendish House, Cavendish Road.
Jessop, Mrs. T. R.	32, Park Square.
Johnston, Miss M. N.	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Jowitt, Miss E. M.	Woodfield, Newton Hill.
Joy, Mrs. Lomas	Weetwood Mount.
Joy, Miss	Do.
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Kettlewell, Miss F. A.	Do.
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Nelson, Miss C. E.	Do. Do.
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Ryder, Miss E. I.	Do. Do.
Ryder, Miss Mary	Do. Do.
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Shaw, Miss	St. Mark's Villa.
Simpson, Miss Alice	9, Blenheim Terrace.
Simpson, Miss F.	Do. Do.
Simpson, John	Do. Do.
Slade, Mrs. R.	14, Springfield Mount.
Smeeton, Mrs. W.	15, Reginald Terrace, Chapeltown Road.
Smeeton, C. W.	Do. Do.
Smeeton, Miss Alice	Do. Do.
Smith, Miss Farrar	Hope Villa, Woodhouse Lane.
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Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Tatham, Miss G.	Springfield Mount.
Taylor, Miss J.	28, Clarendon Road.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. Do.
Teale, Michael	Do. Do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
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Watson, Mrs. Charles	Burton Grange, Far Headingley.

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FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

LEEDS

Philosophical & Literary Society.

THE ANNUAL REPORT

For 1884-5.

THE

SIXTY-FIFTH REPORT

OF

THE COUNCIL

OF THE

LEEDS PHILOSOPHICAL & LITERARY SOCIETY,

AT THE

CLOSE OF THE SESSION 1884-5.

Read at the Annual Meeting, May 5th, 1885.

LEEDS:
GOODALL AND SUDDICK, COOKRIDGE STREET.

MDCCCLXXXV.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

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(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

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(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-FIFTH SESSION.

THE Council have the gratification of reporting a net increase of 72 subscribers during the year. The numbers now stand higher than at any other time during the past six years.

The present position of the Society in this respect compares with that of last year as follows :—

	1884	1885.
Original Proprietary Members (78 shares) ..	72	72
New Proprietary Members (121 shares)	99	96
Ordinary Members...	6	5
New Ordinary Members	83	85
Annual Subscribers of £1 1s	191	230
Annual Subscribers of 7s. 6d.	178	213
Total	629	701

A large number of fluctuations among subscribers occur, as would be expected, in each year, and the question whether on the whole a loss or a gain is found depends upon a variety of circumstances, but chiefly, it appears, upon the popularity of the Lecture Card. To the unusual interest taken in the lectures during the past session is no doubt to be attributed the present satisfactory condition of our roll of subscribers.

The following is the list of papers read at the Society's General Meetings during the year:—

1. "Some of the Rabbis of Israel." Ven. Archdeacon Farrar, D.D., F.R.S. (Canon of Westminster). *Read Oct. 23rd*, 1884.
2. "Literature and Science." Matthew Arnold, M.A. *Read Nov. 4th*, 1884.
3. "Fairy Tales and their Origin." Andrew Lang, M.A. *Read Nov. 11th*, 1884.
4. "Beauty in Nature and Art." Prof. J. S. Blackie, M.A. *Read Dec. 2nd*, 1884.
5. The CONVERSAZIONE. *Dec. 9th*, 1884.
6. "Germs." Donald MacAlister, M.A., M.D. *Read Jan. 13th*, 1885.
7. "Star Fishes and Sea Urchins." P. Herbert Carpenter, D.Sc. *Read Jan. 20th*, 1885.
8. "Arthur Hallam and his Contemporaries." Charles G. Milnes Gaskell, M.A. *Read Feb. 3rd*, 1885.
9. "Herodotus." Thomas Marshall, M.A. *Read Feb. 10th*, 1885.
10. "On the Character of Water as Indicated by the Number of Minute Organisms." H. Clifton Sorby, LL.D., F.R.S. *Read March 10th*, 1885.
11. "The Island of Socotra." Prof. I. Bayley Balfour, M.A., D.Sc., F.R.S. *Read March 17th*, 1885.
12. "Novels and Novel Writers among the Old Greeks." Prof. J. P. Mahaffy, M.A. *Read March 31st*, 1885.
13. "Grub Street." T. Wemyss Reid. *Read April 14th*, 1885.

The special thanks of the Society are due to Mr. Matthew Arnold, Mr. Charles Milnes Gaskell, Mr. Thomas Marshall (one of the Vice-Presidents of the Society), and Mr. T. Wemyss Reid, for their valuable lectures, which were delivered gratuitously to the Society.

Departing somewhat from the usual practice on such occasions, the Council engaged Mr. Henry Blackburn, editor of *Academy Notes*, to give at the Society's Conversazione a short account of some of the most noteworthy

among recent pictures. His remarks were illustrated by the oxy-hydrogen lantern.

By the kindness of Mrs. Heaton, visitors to the Conversazione had the opportunity of inspecting the admirable oil-painting of the late Dr. J. Deakin Heaton, which has since been presented to the Yorkshire College. The artist, Mr. J. Pettie, R.A., has faithfully portrayed the likeness of one whose services to the Society for a long period, as President and in other offices, have not been surpassed.

Among the collections exhibited on this occasion may be noticed valuable specimens of Majolica ware from the Fountaine Collection, lent by Mr. John Rhodes. An interesting series of pictures was also on view, contributed by Messrs. Edward Birchall, F. Burnett, J. J. Cousins, J. R. Flitch, J. W. Gaunt, S. C. Hatch, H. B. Hewetson, S. Ingham, E. E. Lawson, J. C. Malcolm, J. W. Oxley, A. W. Mayo Robson, Lester Sutcliffe, G. Thirkettle, R. Wilson, and others.

As a result of the increase in the number of subscribers, the accounts for the year show that £68 of the debt which was owing at the beginning of the year has been paid off. The amount now due to the Treasurer is £49 3s. 11d. A still larger reduction in the debt would have taken place but for a diminution in the receipts from the letting of the Society's Hall and Cellars, and from a reduced number of visitors to the Museum. The number of paid entries to the Museum was 26,347, being 3,065 less than the year before,

Mr. Alfred Denny, a son of the former esteemed Curator of the Museum, resigned his office of Assistant Curator, on his appointment as Lecturer on Biology in Firth College, Sheffield, on the 30th September last. The Council acknowledge the value of Mr Denny's faithful and efficient services during three years, and wish him all success in his new sphere. Mr. W. E. Clarke was appointed Curator's Assistant in Mr. Denny's place.

In compliance with a promise made at the Annual Meeting, the Council took steps to ascertain whether a Special Art Exhibition in the Society's Rooms would be feasible. The Committee which was appointed to inquire into the subject, after holding several meeting, and making considerable progress with a scheme, reported that such an exhibition could not be satisfactorily arranged during that session.

The collections of British Birds have received special attention during the past year. It has been found necessary to provide increased space for the valuable Milner collection, which has been re-arranged and cleaned. New labels, giving information respecting the distribution and local range of the species, have been fixed to the cases. In this department the Museum has benefited by the care and knowledge of Mr. Clarke, the Assistant-Curator, whose unusual qualifications for ornithological work are well known. The re-arrangement of the British Birds will be followed by considerable changes in the general collection of Birds. It is proposed to break this up into groups, illustrative of classification, distribution, seasonal variation and other special aspects, in the hope of

obtaining an arrangement more interesting than the formal ranking of long rows of species under purely zoological divisions. It has long been felt that the stuffed birds require to be supplemented by specimens which can be studied in the hand, and the Council have now placed a large skin-cabinet in the Bird Room, which is for the present occupied by a collection of skins deposited by Mr. Clarke. We hope that working naturalists will benefit by changes made expressly to promote their studies.

Palæontologists have long been aware that the Society's Museum contains some of the finest known examples of the large Coal Measure Fish named Megalichthys. It has been thought that a special description of the more important fossils of this genus, if suitably illustrated, would be acceptable to some of our correspondents and visitors, and the Council have authorised the publication of such a description, which has been prepared by the Curator, and is now ready for press.

The books in the Library have been cleaned and compared with the Catalogue. At the request of this Society, representatives of the chief Libraries in Leeds have met to discuss in common their lists of scientific serials. The conference has led to some saving of superfluous duplicates, and to a proposal of exchange of books between the Leeds Library and the Philosophical Society. The agreement is submitted for ratification to the members of the Society. If adopted, we shall hand over a number of books which are not known to have been ever taken down from our shelves by any reader, while we

shall gain many volumes which will fill up gaps in valuable sets, and materially increase the usefulness of our library to all scientific students.

The Society's roll of Honorary Members has lost a distinguished name during the year. Sir Harry S. Parkes, G.C.M G., K.C.B., Ambassador to China, died on March 21st. He commenced public life in connection with Sir Henry Pottinger's mission to China, and acted as Interpreter and Consul in that country, afterwards filling the posts of Envoy Extraordinary and Minister Plenipotentiary in Japan from 1865 to 1883. During the last two years of his life, he was Envoy Extraordinary, Minister Plenipotentiary and Chief Superintendent of Trade in China. In 1860, while secretary to Lord Elgin, he was imprisoned and maltreated by the Chinese. In the session 1862-3, Sir Harry Parkes read before the Society a paper on "China, its present state and relations with Europe."

Within the last few days, a former President of the Society, whose direct connection with Leeds terminated many years since, has died. The Rev. Chas. Wicksteed, B.A., exerted much influence in Leeds for a period of nearly twenty years, and his intellectual attainments admirably fitted him for the active part which he took in the affairs of this Society. He occupied the position of President from 1851 to 1853. His first Presidential address to the members of the Society, was on "Homeric contrasts of character," and that of the following year was "On the Literary Styles of great Military Commanders—Xenophon, Cæsar, Napoleon and Wellington." Mr. Wicksteed died at Croydon on April 20th, in the 75th year of his age.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1884.

1884.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	44·5	29·780	4·03
February	42·7	29·686	1·94
March	44·5	29·721	1·45
April...	45·7	29·675	1·82
May	53·6	29·792	1·12
June	58·1	29·875	0·74
July	62·8	29·738	4·62
August	65 1	29·828	0·94
September	58·4	29·821	1·38
October	50·4	29·857	1·50
November	43·1	29·724	0·79
December	39·4	29·612	2·71

The mean monthly temperature was 50·7.

The mean monthly height of the barometer was 29·759 inches.

The total rainfall for the year was 23·04 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 87° on August 11th; and the minimum 26° on November 29th.

The greatest barometric pressure was on October 5th, being 30·6 inches, the temperature of the mercury being 57°, the least pressure was on January 26th, being 28 278, the temperature of the mercury being 54°.

The greatest fall of rain (during 24 hours) was on July 9th, being 1·6 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR 1884-5.

	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1884 ...				0	1	0
,, Receipts for the Year ending April 30th, 1885, viz.—						
,, Annual Subscriptions, viz.—						
80 New Proprietary Members, at 21/- ...	84	0	0			
4 Original Ordinary do. 42/- ...	8	8	0			
64 New Ordinary do. 21/- ..	67	4	0			
153 Annual Subscribers, at 21/- ...	160	13	0			
59 New do. 21/- ..	61	19	0			
144 Annual Subscribers, at 7/6 ...	54	0	0			
55 New do. 7/6 ..	20	12	6			
,, Arrears	110	15	6			
				567	12	0
,, Rent, viz —						
Cellars	17	11	3			
Lecture Room	125	4	0			
				142	15	3
,, Receipts from Visitors to Museum	109	15	7			
,, Ditto do. Conversazione ...	34	0	0			
				143	15	7
,, Sale of Catalogues	0	7	8			
,, Sundries	0	15	3			
				1	2	11
,, Donation, viz.—						
Mr. T. Emsley				10	0	0
,, Sale of Forfeited Shares				20	8	0
,, Balance Due to Bank				49	3	11
				£934	18	8

	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1884				117	4	8
,, Payments during the Year ending April 30th, 1885, viz.—						
Repairs and Alterations	28	13	3			
Rates and Taxes	4	16	9			
Fire Insurance	15	0	0			
Coals, &c.	17	0	8			
Gas	13	9	4			
Cleaning	7	2	3			
				86	2	3
,, Salaries	368	5	0			
Fee to Auditor	2	2	0			
				370	7	0
,, Collections, viz.—						
Geological	6	0	10			
Zoological	42	7	2			
Library	26	7	3			
				74	15	3
,, Postages	14	8	9			
,, Advertising and Printing	66	7	7			
,, Lectures	96	13	2			
,, Conversazione Expenses	79	16	5			
,, Bankers' Commission	3	10	0			
,, Sundries	10	0	6			
				270	16	5
,, Furniture				13	16	1
,, Balance in Hand				1	17	0
				£934	18	8

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above a correct abstract of the same.

June 2nd, 1885.

BEEVERS & SPICE,
CHARTERED ACCOUNTANTS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1884-5.

ARCHÆOLOGY.

Coins, Tokens, and old Leeds Bank Notes	The late Mr. Charles Jackman.
Poisoned Arrows from Australia	J. J. Horrocks, Esq.

PALÆONTOLOGY.

Specimen of Calamite from Wortley, near Leeds.	Messrs. W. Ingham & Sons, Wortley.
Additional Fragments of Megalichithys, specimens of Posidonomya, &c., from Halifax Hard Bed, Idle	Mr. A. Oldroyd, Idle.
Orthocercas Bigsbyi (?), Favosites Gothlandica, and Poteriocrinus, from the Niagara Limestone, Rockwood, Ontario	The late T. Harvey, Esq.
Spine of Pleuracanthus lævissimus, in shale, from Tingley Pits, near Leeds	Dr. Eagland.
Large Fossil Shell (Pecten or Spondylus?) from Chalk at Flixendale, Yorkshire Wolds.....	R. Mortimer, Esq., Fimber, Wharem, York.

ZOOLOGY.

Collection of British Birds' Eggs, including Thrush, Blackbird, Robin, Hedge Accentor, Sparrow, Starling, Jackdaw, Ring Dove, Moor-hen, Landrail, Partridge, and Lapwing	Mr. T. Pollard.
Collection of Lepidoptera, from South Australia, and Egg of Emeu	J. J. Horrocks, Esq.

Wasp's Nest on twig of Elder, found in a garden in Leeds	H. Hick, Esq., Surgeon, Leeds.
Albino Hedge Accentor, shot near Leeds	W. H. Watson, Esq., Horsforth.
Collection of British Birds of Prey.....	Deposited by Mrs. Manning.
Skin of Roseate Spoonbill (Platalea ajaja)	S. A. Adamson, Esq., F.G.S., Leeds.
Sparrowhawk (fresh)	T. W. Stansfeld, Esq.

PUBLICATIONS.

The Fossils of the Yorkshire Lias, by Martin Simpson	Purchased.
Institutes of Natural and Revealed Religion, by Joseph Priestley, LL.D., F.R.S.	Purchased.
Reports from the Consuls of the United States on the Commerce, &c., of their Consular Districts.....	Department of State.
Scatcherd's History of Morley, with MS. Notes by the Author	C. J. Hare, Esq., M.D., London.
Karten der Mittelalters von Henrich Wuttle, Dresden, 1871..... Raii Historia Plantarum, London, 1686. Two vols.	The Rev. C. Hargrove, M.A.
List of Fellows of the Linnean Society of London, for 1883	Dr. Clifford Allbutt, M.A., F.R.S.
Catalogue of Lizards in the British Museum, Vol. I., by G. A. Boulenger Catalogue of Fossil Mammalia in the British Museum, Pt. I., by R. Lydekker Guide to the Galleries of Mammalia in the British Museum ..... Guide to the Collection of Fossil Fishes in the British Museum..... Catalogue of Birds in the British Museum. Vol. X, by R. Bowdler Sharpe	British Museum.
Memoirs of the National Academy of Sciences, U.S.A., Vol. II.....	The Academy.
Fauna der Gaskohle, Vol. II., Pt. I., by Dr. Anton Fritsch	Purchased.

Greenwich Observations, 1882	Astronomer Royal.
Second Annual Report of the United States Geological Survey, 1880-81, by J. W. Powell	Department of the Interior.
Third Ditto, Ditto 1881-2	

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Journal of the Chemical Society.....	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society
Atti della R. Accademia dei Lincei ...	The Society.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.
Proceedings of the Zoological Society	Zoological Society.

ANNUALLY.

Philosophical Transactions	Purchased.
Annual Report of the Yorkshire Philosophical Society, 1884	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society, 1883-4.	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year) Register of Papers published in the Transactions and Proceedings of the American Philosophical Society ...	American Philosophical Society.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.A.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings and Transactions of the Royal Irish Academy	Royal Irish Academy.
Transactions of the Manchester Geological Society.....	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Proceedings of the Davonport Academy of Natural Sciences.....	Davenport Academy of Natural Sciences, Iowa, U.S.A.
Report of the Middlesex Hospital ...	The Hospital.
Calendar and Annual Report of the Yorkshire College, Leeds	The College.
Annual Report and Publications of the Manitoba Historical and Scientific Society.....	Manitoba Historical and Scientific Society.

Transactions of the Yorkshire Naturalists' Union	
Mémoires de la Société d'Émulation d'Abbeville, Vol. III.	The Society.
List of the Geological Society of London, for 1884.....	Geological Society.
Proceedings of the Birmingham Philosophical Society	Birmingham Philosophical Society.
Materiaes para o estudo Anthropologico dos povas Açorianos, by F. d'A Furtado	Mr. F. d'A Furtado.
Comparative Vocabularies of the Indian Tribes of British Columbia Descriptive Sketch of the Physical Geography and Geology of Canada, with Geological Map	Dominion Government of Canada.
Proceedings of the Royal Society of Edinburgh ..... Transactions of do.	Royal Society of Edinburgh.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society.....	Liverpool Geological Society.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Boston Society of Natural History, U.S.A..... Memoirs of do.	Boston Society of Natural History.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.

Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Reports and Papers of Meetings of the Architectural Societies of Lincoln and York	The Societies.
Report on the Polyzoa of Queen Charlotte's Islands, by the Rev. T. Hincks, B.A., F.R.S.	Rev. Thomas Hincks.
Scientific Proceedings of the Royal Dublin Society (several Parts) ..... Scientific Transactions do. (several Parts)	Royal Dublin Society.
Report of the Howard Association...	Howard Association.
Annual Report of the American Museum of Natural History, 1884-5	American Museum.
The Elephant Pipes in the Museum of the Academy of Natural Sciences of Davenport, Iowa.....	The Academy of Natural Sciences of Davenport.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of Harvard College ...	The College.
Annual Report of Harvard University	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club.....	Belfast Naturalists' Field Club.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society.....	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Proceedings of the Royal Society.....	Royal Society.

Report of the Smithsonian Institution Second Report of the Bureau of Ethnology	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do.	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year).....	Royal Dublin Society.
Proceedings of the Royal Institution (2 parts a year)	Royal Institution of Great Britain and Ireland.
Papers and Proceedings of the Royal Society of Tasmania.....	Royal Society of Tasmania.
Annual Report of the Cooper Union for the Advancement of Science ...	The Union.
Proceedings and Transactions of the Royal Society of Canada	Royal Society of Canada.
Transactions of the Linnean Society 17 Vols. ..... Transactions of the Geological Society, Vols 1—12, Plates 1—10 ..... Bulletin des Sciences Mathematiques, Vols. 1—16 ..... Bulletin des Sciences Médicales, 26 Vols. ..... Bulletin des Sciences Naturelles, 26 Vols. ..... Bulletin des Sciences Technologiques, Vols. 1—17 ..... Bulletin des Sciences Agricoles, Vols. 1—19 ..... Annales and Mémoires du Muséum National d'Histoire Naturelle, Vols. 1—20 ..... Annales des Sciences Naturelles, 8 Vols. Annals and Magazine of Natural History, 86 Vols. ..... Philosophical Magazine, 114 Vols. ...	Received in exchange from the Leeds Library.

LIST OF OFFICERS AND COUNCIL,

1885-6.

OFFICERS:

PRESIDENT	EDWARD ATKINSON, F.L.S.
VICE-PRESIDENTS. . .	J. E. EDDISON, M.D. THOMAS MARSHALL, M.A.
TREASURER . . .	HENRY OXLEY.
HONORARY SECRETARIES .	RICHARD REYNOLDS, F.C.S. A. W. RÜCKER, M.A., F.R.S.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., M.A., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	REV. JOHN GOTT, D.D.
HONORARY LIBRARIAN .	T. E. THORPE, Ph.D., F.R.S.

The above officers, with the following gentlemen, form the

COUNCIL.

HENRY DAVEY.	SYDNEY LUPTON, M.A.
E. FILLITER, F.G.S.	JOHN MARSHALL, M.A.
REV. CHAS. HARGROVE, M.A.	W. NICHOLSON PRICE.
A. G. LEGARD, M.A.	T. WEMYSS REID.
F. M. LUPTON, M.A.	T. SCATTERGOOD.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary . . .	W. F. HUSBAND, LL.B.
Assistant Curator . .	W. E. CLARKE, F.L.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1885-6.

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* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	
4	Arthington, Robert	Headingley.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds
6	Barran, John, M.P.	Chapel-Allerton Hall.
20*	Battye, James C.	
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
9	Broadhead, Wm. Henry	22, Sholebroke Avenue, Chapeltown Road.
11*	Brown, James	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, nr. Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
17	Clapham, Samuel	Warwick Villas.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
22	Denison, William Beckett	Nun-Appleton, York.

23	Dibb, Mrs. Elizabeth .	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John .	Oakfield, Kirkstall.
27	Ellershaw, Walter .	7, High Street, Hull.
28	Empson, Christopher .	Beechwood, Sowerby Bridge.
48	Ford, J. R. .	Shaw Lane, Headingley.
29	Ford, Mrs. .	Adel Grange.
46	George, Thomas Willington .	Gledhow Grove.
33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares) .	Woodsley House.
36-8	Gott, William Henry (3 shares) .	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
39	Harding, T. R .	St. Ann's Tower, Headingley.
40	Heaps, John William .	Park View Villas, Cowper St.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
42	Heaton, Beresford Rimington .	Claremont, Leeds.
44	Hirst, Joseph .	Wharfedale Lawn, Wetherby.
45	Holt, Joseph .	Ogbeare Hall, Holsworthy Devon.
30	Horsfall, John, M.A. F.R.C.S. .	Hillary House.
24	Howgate, William .	Park Row.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, John .	Harehills, Potternewton.
51	Kinnear, Thomas John, M.A. .	The Abbey, Malton.
55	Luccock, Mrs. .	54, North Street.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A. .	Wellington Street.

56	Lupton, Sydney, M.A.	The Harchills, near Leeds.
58*	Makins, Charles	
77	Marsh, John Jenks	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	Headingley House.
60*	Marshall, Rev. Edmond Henry	
63*	Marshall, Henry Cowper.	
64, 65*	Marshall, J. G., F.G.S. (2 shares)	
66	Marshall, Reginald Dykes	Cookridge Hall.
67	Marshall, Victor Alexander Ernest, B.A.	Monk Coniston, Ambleside.
43	Nelson, George Hird	Denison Hall.
7	North, John	East Parade.
68	Nunneley, J. A., M.B.	22, Park Place.
69	Rhodes, John	Potternewton House.
70	Shepherd, John	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George	Springfield Mount.
52	Taylor, Benjamin	160, Briggate.
50	Taylor, John Charles	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs.	Scarborough.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler	Belvidere, Newton Road.
75	Walker, Edward	32, Springfield Mount.
76	Ward, William Sykes F.C.S.	Denison Hall, Hanover Square.
12	Wilson, Rev. Benjamin	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund	8, Osborne Terrace, Virginia Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

118	Anderson, Christopher	Osborne Terrace, Virginia Road.
1	Atkinson, Daniel Hopkin	2, Albert Avenue, Starbeck, near Harrogate.

32	Atkinson, Edward, F.L.S.	Eldon House, Woodhouse Lane.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A. .	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.
15	*Bilbrough, Joseph Brooks	
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.
5, 6	*Brown, William (2 shares)	
89	Buckton, Joshua .	West Lea, M'eanwood.
8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	West Wood, Scarborough.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
19	Fairbairn, Sir Andrew M.A., M.P. .	Askham Richard, near York.
20	*Farrer, James .	
105	*Ferguson, William .	
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15,	Gott, Wm. Henry (P) (10 shares) .	Armley House.
22	Hargrave, Charles .	St. Agnesgate House, Ripon.
23	*Hargrave, James .	
7	Hargrove, Rev. Charles M.A. .	8, Montpelier Terrace.

16	Harvey, William .	West View, North Hill Road.
81	Hatch, S. C. .	Oak Lodge, Headingley.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	North Hill Road, Headingley.
36	Hudson, Henry .	Oakwood, Roundhay.
120	Ingham, Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43*	Kitson, James .	
46	Kitson, J. Hawthorn .	Cardigan House, Headingley.
47	Kitson, James, Junr. .	Spring Bank, Headingley.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick Willm.	Woodfield, Wood Lane.
50*	Leather, J. Towlerton .	
53	Lupton, Arthur .	Headingley Hill.
95	Lupton, Arthur Greenhow	Wellington Street.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56*	Lupton, Darnton .	
63, 99, 100	Lupton, Fras. Martineau M.A. (P)(3 shares)	Wellington Street.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
72	Marshall, John, F.R.A.S.	Church Institute.
62	Marshall, Stephen Albert B.A. .	Weetwood Hall.
24	Matthews, Rev. J. H. D., M.A. .	Grammar School, Leeds.
27*	Maude, Edmund .	

117	Middleton, Arthur .	Hawk Hills, Chapel-Allerton.
29*	Milner, Henry B. W. .	
65, 66	Nicholson, Albert H. (2 shares) .	
30	Nicholson, Marshall .	Middleton Hall, Beeston.
64	Nickols, Richard .	Hill Top, Bramley.
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28*	Passavant, P. W. .	
82	Pearson, John Thomas .	Moor House, Far Headingley.
93	Pebody, Charles .	23, Albion Street.
11	Price, William Nicholson	Mount Pleasant.
38	Ralph, John, M.A. .	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John .	Park Row.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, Edward .	Gledhow Wood, Gledhow.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M. .	
57	Stringer, John William .	Inglebank, Far Headingley.
73	Teale, T. Pridgin, M.A., F.R.C.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert .	
76	Tennant, Thomas .	21, Blenheim Terrace.
78*	Tetley, F. W. .	
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall .	Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William .	28, Albion Street.
71	Ward, John .	Moor-Allerton House.
111	Watson, William Henry .	Horsforth.
97	Weston, Edward .	Newton Park Villa, New Leeds.

42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William Musgrave	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
17	Wilson, Richard	Commercial Street.
35	Wood, Richard	Newton Villa, Potternewton.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

2	Atkinson, J. H.	12, East Parade.
11	Ramskill, Josiah	29, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A.	Meanwood.
35	Armstrong, Prof. G. F., M.A.	Vold House, Clarendon Road.
2	Baines, Talbot	Westfield, St. Michael's Road.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Burley View.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T.	Oriel House, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George	Blackman Lane.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.

12	Carbutt, E. H., M.P.	19, Hyde Park Gardens, London, W.
13*	Carter, Robert Meek	
14	Corson, George	Wood Lane, Headingley.
36	Davey, Henry	Rupert Lodge, Headingley.
16	Denny, T. G.	2, Moor View, Hyde Park.
19	Eddison, Frederic	The Manor, Adel.
20	Eddison, Robert William	The Willows, Adel.
21	Firth, William	Burley Wood House.
48	Fraser, Henry John	Fairlea, Wood Lane, Headingley.
69	Fraser, James B.	44, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A.	30, Hyde Terrace.
27	Hargrave, John	St. Ann's Lodge, Burley, nr. Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Chemical Works, Crown Street.
81	Holroyd, James	4, College Road.
29	Holt, Henry Percy, C.E., F.G.S.	Fairlea, Palatine Road, Didsbury, Manchester.
30	Holt, Joseph (P)	Ogbeare Hall, Holsworthy, Devon.
31	Illingworth, William	Flower Bank, Burley.
33*	Irwell, Julius	
32*	Irwin, Edwin	
34	Jackson, W. L., M.P.	Buslingthorp, Leeds.
67	Jefferson, Peter	15, Kensington Terrace.
37	Kemplay, Miss	Ridge House, Leeds.
86*	Lambert, Joseph	
38	Lawson, Thomas	Newton Hill, Potternewton.
39*	Lawson, John	
41	Ledgard, Mrs.	Eller Close, Roundhay.
88	Legard, Albert G., M.A.	Grosvenor Terrace, Headingley.
23	Lupton, Prof. Arnold, M.I C.E.	4, Albion Place.
44	McCheane, Miss Ethel	The Hollies, Headingley.
43	Manning, H. J.	

45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Otley Road, Headingley.
47	Morley, Herbert Ogle	
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
58	Nicol, W. H.	2, Clarendon Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Chapeltown Road.
9	Reid, T. Wemyss	Cardigan Road.
22	Reynolds, Richard F.	Cliff Lodge, Hyde Park.
62	Riley, H. W.	King Street.
73	Rowley, Walter, C.E., F.G.S.	Alder Hill, Meanwood.
65	Rücker, Prof. A. W., M.A., F.R.S.	Claremont, Leeds.
66	Sharpe, Miss	
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
70*	Somers, Francis	
71	Stables, James	Lane Ends, Horsforth.
36	Tennant, John	18, Albion Street.
18*	Thornton, Charles	
76	Thorpe, Prof. T. E., Ph.D., F.R.S.	Oak Bank, Shaw Lane, Headingley.
77	Titley, Mrs. Anthony	Manor House, Victoria Grove.
78	Titley, T. A.	Oakley House, Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.

82 Walker, H. B.	.	Heath Cottage, Moortown.
83 Ward, Edmund	.	Denison Hall, Hanover Square.
57 Ward, George, F.C.S.	.	Buckingham Terrace, Headingley.
90 Ward, William	.	32, Hyde Terrace.
84*Whiteley, James T.	.	
85 Willson, J. J.	.	2, Moorland Terrace.
42 Wilson, Mrs. Richard	.	Brown's Bank, Commercial St.
87*Young, John	.	

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	.	Woodhouse Lane.
Addyman, J. W.	.	15, East Parade.
Albrecht, Martin	.	Bleak House, Headingley.
Ambler, T.	.	9, Park Place.
Anson, G. E.	.	The Woodlands, Weetwood.
Appleyard, T. W., Jun.	.	Oak Lea, Cardigan Road.
Armistead, Edwin	.	Albion Street.
Ash, Julius	.	19, Cookridge Street.
Asquith, John Robert	.	Bond Place.
Atkinson, Miss	.	Clarendon Road.
Atkinson, C. M.	.	6, Park Square.
Atkinson, J. T.	.	Selby.
Atkinson, Law	.	5, Woodhouse Square.
Atkinson, Samuel	.	Moor-Allerton Lodge.
Averdieck, Miss	.	Rawdon.
Bagshaw, Washington	.	31, Virginia Road.
Barr, Prof. A., B.Sc., C.E.	.	21, Hillary Street.
Barran, John, Junr.	.	St. Ann's Grange, Burley.
Barran, A.	.	Clarendon Road.
Barran, Charles	.	3, Mount Terrace, Chapel-Allerton.
Barran, Rowland Hirst	.	Chapel-Allerton Hall.
Barrs, A. G., M.D.	.	22, Park Place.
Bartholomew, W. H., C.E.	.	Ridge Way House.
Bentfield, Charles	.	Shaw Lane, Headingley.

Berridge, H. D., M.A.	The Grammar School, Leeds.
Bewley, Rev. Joseph	5, Reginald Terrace.
Birchall, Oswald	Moor Bank, Ilkley.
Blakeborough, Wm. Hy.	Whitelock Mills, Leeds.
Bland, Miss Mary Jane	Lilford House, Queen Square.
Bothamley, C. H., F.C.S.	Yorkshire College.
Bottomley, Herbert	Woodleigh Hall, Rawdon.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	14, Commercial Street.
Brigg, E. Newsom	Carlton Hill.
Brigg, Matthew A.	12, Sholebroke Avenue, Chapeltown Road.
Brigg, Thomas S.	Cromer Terrace.
Brigg, William	Hollin Lane, Far Headingley.
Brocklehurst, George H., B.Sc.	High School, Roundhay.
Brocklehurst, T. P.	Do.
Brodie, W. L.	Royal Exchange.
Brown, A. Kemp, B.A.	11, Richmond Road, Headingley.
Bruce, William	Snow Farm, Weetwood.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Woodbourne, Roundhay Park.
Bulmer, Charles	Blenheim Lodge.
Butler, Edmund	Kirkstall Forge.
Butler, Edward	HampdenVilla, Headingley Hill.
Campbell, Archibald	23, Hyde Terrace.
Chadwick, Dr. Charles M.	3, Park Square.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Chorley, R.	Messrs. McCorquodale & Co., Limited, Leeds.
Clare, W., LL.D., L.R.C.P.	Park Square.
Clark, Miss	Potternewton.
Clarke, Charles Henry	Newton House, Spencer Place.
Clemons, G. H.	1, Grosvenor Mount.
Cockrell, Harold Buckler	14, Vernon Road.
Conder, Rev. E. R., D.D.	1, Newton Grove, New Leeds.

Connon, J. W.	Park Square.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	Vernon House, Roundhay.
Crawford, James	Chapel-Allerton.
Croysdale, John	Monk Bridge Road, Headingley.
Dalton, George	The Yews, North Hill Road.
Davis, Edward	Milton Lodge, Far Headingley.
Dixon, H.	Yeadon House, Woodhouse Lane.
Drake, Dr. F. H.	Otley Road, Headingley.
Dufton, Arthur Wellesley	74, Springfield Place.
Eddison, Octavius, B.A.	70, Albion Street.
Ellison, James Edward	10, De Grey Road.
Exley, William	Cleveland Villa, Shipley.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Flitch, John R.	Chapel-Allerton.
Flockton, William	Hopewell House, Oulton, nr. Leeds.
Flood, F. P.	2, Lodge Street, Woodhouse Lane.
Foster, George	Osmondthorpe.
Gane, Lawrence	East Parade.
Garlick, Miss	St. John's Terrace, Belle Vue Rd.
Gaskell, George V.	Willow House, Chapeltown Road.
Gaunt, John B.	Boyers' House, Bramley.
Glover, F.	16, De Grey Road.
Goodson, R.	Bedford House, Roundhay.
Gordon, Miss	The Infirmary, Leeds.
Gray, T. H.	Brookleigh, Calverley.
Green, W. Penrose	Asket Hill, Roundhay.
Greig, John Kinloch	7, Cavendish Road.
Hall, Frederick, M.D.	St. Mark's Villas, Woodhouse Lane.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hardcastle, C. D.	31, Victoria Place, Camp Road.
Harding, Anthony Robinson	Sefton House, Louis Street.
Harding, T. W.	St. Ives, Headingley.

Hartley, Joseph, LL.D.	10, Park Square.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hawkins-Ambler, G. A., F.R.Hist.S.	Lea Bank, Kirkburton, Huddersfield.
Hay, Miss Jane	Horsforth.
Hayes, Thomas J.	Moorland View, Ben Rhydding.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hellier, J. B., M.D.	De Grey Terrace.
Hepworth, S. C.	West Park Street, Dewsbury.
Hewetson, H. B.	9, Hanover Square.
Hick, Henry	Grove House, New Wortley.
Hill, M. S.	41, Virginia Road.
Hill, George	41, Mount Preston.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Hodgson, Miss	37, Mount Preston.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Horsfield, Rev. R.	5, Newton Grove.
Howroyd, W. T.	Prospect Cottage, Dewsbury.
Humble, Frederick	Adel.
Jackson, J.	Airedale Cliff, Newlay.
Jackson, Richard	Commercial Street.
Jefferson, J. S.	15, York Place.
Jessop, G. W.	Woodcliffe, Rawdon.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, F. W.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Jowitt, Miss	Woodfield, Newton Hill.
Joy, W. Lomas	Headingley.
Kelly, Arthur	Low Royd, Apperley Bridge.

Ker, Dr. Alice J. S.	6, Eldon Place.
Kettlewell, C. B.	38, Commercial Street.
Kirkby, Charles	Claremont Road, Headingley.
Kropff, Augustus	37, St. Paul's Street.
Lambert, William	Oakfield, Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Laycock, Rev. J. A.	2, Eton Terrace, Harrogate.
Leatherdale, G. F., B.A.	3, St. John's Terrace, Belle Vue Rd.
Litchfield, G. A.	Grammar School, Leeds.
Little, F. Buller	Woodlands, Chapel-Allerton.
Lupton, William W.	Newton Hill.
Marshall, J. W.	8, Woodsley Terrace.
Mathers, John S.	Hanover House.
Matterson, Miss	Cavendish House, Cavendish Rd.
Maude, Miss	Knowsthorpe House.
Megson, J. C.	Spencer Place, New Leeds.
Moore, Edwin	50, Cowper Street, New Leeds.
Moorhouse, Samuel	Sholebroke Avenue, Chapeltown Road.
Morrison, G. W.	Town Hall, Leeds.
Motley, Francis	Mount Pleasant.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton House, Chapeltown.
Neill, William	20, Woodbine Place.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Cardigan Road.
Nield, Wm.	Old Manor House, Headingley.
Oates, C. G.	Meanwoodside.
Passavant, Miss Laura M.	29, Virginia Road.
Paul, George, F.G.S.	Moortown, Leeds.
Pawson, John Edward	Lawns House, Farnley, nr. Leeds.
Payne, E. S.	6, Crimbles Street, Camp Road.
Pepper, J. E.	7, Cromer Terrace.

Pickard, Mrs. D.	3, Spring Road, Headingley.
Pickles, J. J.	66, Camp Road.
Powell, William	13, Park Place.
Ransome, Prof. Cyril, M.A.	4, De Grey Road.
Rhodes, John H.	27, Park Square.
Richardson, W. W.	Alma Road, Headingley.
Rider, James	Pease's Buildings, South Parade.
Roberts, Rev. R.	12, Well Close Mount.
Robinson, Edmund	42, Park Square.
Robson, A. W. Mayo, F.R.C.S.	Hillary Place.
Roebuck, W. Denison, F.L.S.	Sunnybank.
Rooke, Charles S.	Newton Hill, Potternewton.
Ryder, Charles	Westfield, Chapeltown.
Sanders, A. J.	5, Blenheim Square.
Sanders, J. A.	Do.
Sanders, T. W.	Do.
Saville, Miss S. E.	2, Virginia Terrace.
Scatcherd, Oliver	Virginia Road.
Shackleton, Joseph	West House, New Wortley.
Shackleton, Thomas	1, Headingley Terrace.
Shaw, Mrs.	St. Mark's Villa.
Simms, T.	7, Commercial Buildings.
Simpson, James T.	4, Blenheim Terrace.
Simpson, James T.	9, Blenheim Terrace.
Simpson, Miss	Belle Vue Villa, Chapeltown Rd.
Slade, Robert	14, Springfield Mount.
Smailes, R.	Carlton Lodge, Woodhouse Lane.
Smeeton, Wm.	15, Reginald Terrace.
Smeeton, Miss E. E.	West Hill.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Smith, Miss	Moorfield House, Headingley.
Snowdon, Henry	Ridge House, Leeds.
Spark, F. R.	29, Hyde Terrace.
Spurge, C., B.A.	Yorkshire College.
Stead, C. F.	The Knoll, Baildon.

Stockdale, T.	Spring Lea.
Stubbins, John, F.G.S., F.R.M.S.	Inglebank, Far Headingley.
Taylor, Mrs. M.	28, Clarendon Road.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Rev. J.	Vicarage, Hunslet.
Thompson, Vincent T.	195, Belle Vue Road.
Thompson, Miss	St. Mark's Villas.
Thorp, W. H.	9, Burton Crescent, Shaw Lane.
Thrippleton, John	2, Evaline Terrace, Burley, Leeds.
Tiffany, George John	17, Grove Terrace.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Turner, Joseph	Spencer Place, New Leeds.
Wade, James	3, Blenheim Square.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, Edward	Elmwood Place.
Walker, Francis	Do.
Walker, James	Newton Park.
Walker, George	Do.
Walker, Reginald T.	27, Hanover Square.
Walker, William	Osmondthorpe Hall.
Ward, Richard	Keldholme, Moor-Allerton.
Ward, Seth	Fairfields, Dewsbury.
Watson, Charles	Burton Grange, Far Headingley.
Webb, Robert, M.A.	Grammar School.
Whitehead, John	Newstead House, Spencer Place.
Whitham, Thomas	Bramhope, Otley.
Willans, J. W.	Beech Holme, Burley.
Wood, John	11, St. Mark's Terrace.
Wood, Miss	27, Blenheim Terrace.
Woodall, H.	17, Ashwood Villas.
Woodcock, Mrs.	19, De Grey Terrace.
Woodhouse, Edwin	The Grange, Armley.
Wright, Charles James	Lynton Villa, Virginia Road.
Wright, Miss L.	4, Virginia Terrace.
Yewdall, Edwin	56, Wade Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Abbott, Mrs. J.	Woodhouse Lane.
Acton, Miss	Mr.Simpson, Blenheim Terrace.
Albrecht, Mrs. M.	Bleak House, Headingley.
Ambler, Mrs. T.	9, Park Place.
Anson, Miss F. G.	The Woodlands, Weetwood.
Ash, Mrs. Julius	19, Cookridge Street.
Ash, Mr.	Do.
Ash. Mr.	Do.
Atkinson, Miss C.	Moor-Allerton Lodge.
Atkinson, Mrs. E.	Eldon House, Woodhouse Lane.
Atkinson, Miss Eleanor S.	Clarendon Road.
Barber, Miss B.	19, Cookridge Street.
Barber, Miss F.	Do.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Mrs. John, Junr.	St. Ann's Grange, Burley.
Barran, Mrs. Charles	3,Mount Terrace,ChapelAllerton.
Bartholomew, Mrs.	Ridge Way House.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Birchall, Mrs. Oswald	Moor Bank, Ilkley.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	14, Commercial Street.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S,	Cromer Terrace.
Brigg, Mrs. William	Hollin Lane, Far Headingley.
Bruce, Mrs. W.	Snow Farm, Weetwood.
Buckton, Mrs. R.	Woodbourne, Roundhay Park.
Bulmer, Mrs. Charles	Blenheim Lodge.
Bulmer, Miss Ada	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Mrs. Edward	Hampden Villa, Headingley Hill.
Butler, Miss	Do. Do.

Campbell, Mrs. A.	23, Hyde Terrace.
Cheetham, Miss E.	Woodbottom Cottage, Horsforth.
Christie, William N.	Southend House, Headingley.
Clare, Mrs.	Park Square.
Clemons, Mrs. G. H.	1, Grosvenor Mount.
Cockrell, Miss	14, Vernon Road.
Connon, Mrs. J. W.	Park Square.
Cooke, Mrs. W.	Moorfield House, Moor-Allerton.
Crampton, Mrs. W. T.	Vernon House, Roundhay.
Crampton, Miss	Do. Do.
Crawford, Mrs. James	Chapel-Allerton.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Monk Bridge Road, Headingley.
Dalton, Mrs. G.	The Yews, North Hill Road.
Davis, Mrs. E.	Milton Lodge, Far Headingley.
Dixon, Miss	Yeadon House, Woodhouse Lane.
Dixon, Miss Clara	Do. Do.
Ellis, Miss	Miss Wood, 27, Blenheim Terrace.
Fairley, Mrs. T.	8, Newton Grove.
Filliter, Miss	West Mount, Clarendon Road.
Flanders, Miss	Mr. Jones, 2, Moorland Road.
Flitch, Mrs. J. R.	Chapel-Allerton.
Garlick, Miss	St. John's Terrace.
Gaskell, Mrs.	Willow House, Chapeltown Rd.
Gaunt, Miss A.	Boyers' House, Bramley.
Gill, Miss L.	Mr. Whitham, Bramhope.
Goodson, Mrs. R.	Bedford House, Roundhay.
Goodson, Miss	Do. Do.
Goodson, Miss L.	Do. Do.
Goodson, B.	Do. Do.
Gray, Mrs. T. H.	Brookleigh, Calverley.
Green, Mrs. A. H.	14, Ashwood Villas.
Green, Mrs. Thomas	Asket Hill, Roundhay.
Green, Miss A.	Do. Do.
Green, Miss Pattie	Do. Do,

Green, Miss Penrose	Asket Hill, Roundhay.
Greig, Mrs. J. K.	7, Cavendish Road.
Haley, Miss	Mr. Denny, 2, Moor View.
Hall, Mrs. F.	St.Mark'sVillas,WoodhouseLane.
Hall, Mrs. W.	Headingley.
Hallilay, Mrs.	28, Burley Road.
Hallilay, Richard Percy	Do.
Harding, Mrs. A. R.	Sefton House, Louis Street.
Harnett, Miss	Mr. C. Ryder, Chapeltown.
Hartley, Mrs. Joseph	10, Park Square.
Hassé, Mrs.	31, Commercial Street.
Hay, Miss Margaret	Horsforth.
Hebblethwaite, Miss S.	12, Blenheim Terrace.
Hepper, Miss	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hick, Mrs. Henry	Grove House, New Wortley.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss Theresa	Do.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Holgate, Mrs. B.	3, Atkinson Street, Hunslet.
Holroyd, Mrs.	4, College Road.
Holroyd, Miss	Do.
Holroyd, Miss Jane	Do.
Horsfield, Miss	5, Newton Grove.
Horsfield, F. R.	Do.
Humble, Miss Alice	Adel.
Humble, Miss Emily	Do.
Humble, Miss Laura	Do.
Jackson, Miss	Buslingthorp, Leeds.
Jefferson, Miss	15, York Place.
Jefferson, Miss M.	Do.
Jessop, Mrs. T. R.	32, Park Square.
Johnston, Miss M. N.	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.

Josephy, Mrs. H.	5, Beech Grove Terrace.
Jowitt, Miss E. M.	Woodfield, Newton Hill.
Joy, Mrs. W. Lomas	Weetwood Mount.
Joy, Miss	Do.
Kettlewell, Miss E.	38, Commercial Street.
Kettlewell, Miss F. A.	Do.
Kirkby, Mrs. Charles	Claremont Road.
Lambert, Miss Ellen Maud	Oakfield, Headingley.
Lambert, Arthur	Do.
Lawson, Miss	Bramhope.
Leatherdale, Miss	3, St. John's Terrace.
Ledgard, Miss	Eller Close, Roundhay.
Little, Mrs. F. Buller	Woodlands, Chapel-Allerton.
Little, Miss Edith	Do. Do.
Malcolm, Mrs. J. C.	Brighton Villa, New Leeds.
Marshall, Mrs. J. W.	8, Woodsley Terrace.
Mathers, Mrs. J. S.	Hanover House.
Megson, Albert	Spencer Place, New Leeds.
Moorhouse, Mrs. S.	Sholebroke Avenue.
Morrison, Mrs. G. W.	Town Hall, Leeds.
Myers, Miss	Cavendish House.
Myers, Miss	Grove House, Roundhay.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. Do.
Nelson, P.	Do. Do.
Newstead, Mrs. J. S.	Woodville, Horsforth.
Nicholson, Mrs. J. C.	Cardigan Road.
Nield, Mrs.	Old Manor House, Headingley.
Nield, Miss	Do. Do.
Nield, Miss E.	Do. Do.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do. Do.
Passavant, Miss	29, Virginia Road.
Passavant, Miss Alice	Do.

Payne, Miss	6, Crimbles Street, Camp Rd.
Pepper, Mrs. J. E.	7, Cromer Terrace.
Pickard, Miss	Spring Road, Headingley.
Pickard, Miss E.	Do. Do.
Pickard, E. S.	Do. Do.
Pickles, Mrs. J. J.	66, Camp Road.
Ralls, Miss	Lilford House, Queen Square.
Ralph, Mrs. John	Lifton House.
Ramsbotham, Miss	16, Park Place.
Ransome, Mrs. C.	4, De Grey Road.
Redmayne, Mrs. John	39, Sholebroke Avenue.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Reynolds, Miss E.	Do. Do.
Rhodes, Miss	27, Park Square.
Richardson, Miss	Alma Road, Headingley.
Richardson, Miss Lilly	Do. Do.
Roberts, Mrs. R.	12, Well Close Mount.
Robinson Mrs. E.	Park Square.
Robson, Mrs. Mayo	Hillary Place.
Rooke, Miss	Newton Hill, Potternewton.
Rooke, Miss E. M.	Do. Do.
Rother, Miss Erna	Mr. B. Josephy, Hyde Terrace.
Russell, Miss	Ridgeway House, Headingley.
Ryder, Miss E. I.	Westfield, Chapeltown.
Ryder, Miss Louisa	Do. Do.
Ryder, Miss Mary	Do. Do.
Sanders, Mrs.	5, Blenheim Square.
Scatcherd, Mrs. O.	Virginia Road.
Shackleton, Miss	1, Headingley Terrace.
Shaw, Miss	St. Mark's Villa.
Simms, Mrs.	7, Commercial Buildings.
Simpson, John	9, Blenheim Terrace.
Simpson, Mrs.	Belle Vue Villa, Chapeltown.
Simpson, Miss H.	Do. Do.
Slade, Mrs. R.	14, Springfield Mount.

Smeeton, Mrs. W.	15, Reginald Terrace.
Smeeton, Miss Alice	Do. Do.
Smith, Miss Farrar	Hope Villa, Woodhouse Lane.
Smith, Miss S.	Moorfield House, Headingley.
Somers, R. M.	47, Briggate.
Spark, Mrs. F. R.	29, Hyde Terrace.
Spark, Miss	Do.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Tatham, Miss G.	Springfield Mount.
Taylor, Miss J.	28, Clarendon Road.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. Do.
Teale, Michael	Do. Do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thompson, Mrs. V. T.	195, Belle Vue Road.
Thompson, Miss E.	St. Mark's Villas.
Thorp, Mrs. W. H.	9, Burton Crescent, Shaw Lane.
Turner, Mrs. J.	Spencer Place, New Leeds.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss H.	Elmwood Place.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Walker, Mrs. William	Osmondthorpe Hall.
Walker, Miss	Do. Do.
Walker, Miss Adeline	Do. Do.
Walker, Miss Edith M.	Do. Do.
Walker, Herbert	Do. Do.
Ward, Mrs. G.	Buckingham Terrace.
Ward, Mrs. Richard	Keldholme, Moor-Allerton.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Whitehead, Mrs. J.	Newstead House, Spencer Place.
Willans, Mrs.	Beech Holme, Burley.

Wood, Miss	. 11, St. Mark's Terrace.
Woodcock, Miss C.	. 19, De Grey Terrace.
Woodhouse, Mrs. E.	. The Grange, Armley.
Woodhouse, Miss	. Do. Do.
Woodhouse, Miss	. Do. Do.
Wright, Mrs. C. J.	. Lynton Villa, Virginia Road.
Yewdall, Mrs.	. 56, Wade Lane.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Spencer F. Baird, M.D., Smithsonian Institution, Washington, United States.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

W. Boyne, F.S.A.

Henry Bowman Brady, F.R.S., Devonshire Club, London.

Sir Frederick J. Bramwell, F.R.S., M. Inst. C.E., 5, Great George Street, Westminster.

Duca Frederico Lancia diBrolo, Palermo.

Joseph Burland, South Cave.

Principal Sir J. W. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of McGill University, Monrteal.

Dr. Day, Mendoza, Argentine Republic.

Lewis Llewelyn Dillwyn, M.P., F.L.S., F.G.S., Hendrefoilan, Swansea, Glamorganshire.

The Lord Bishop of Ely, The Palace, Ely.

The Right Hon. The Earl of Enniskillen, LL.D., D.C.L., F.R.S., F.G.S., M.R.I.A.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna, &c., &c.

The Rt. Hon. W. E. Forster, M.P., F.R.S., Burley-in-Wharfedale.

George Lane Fox, Bramham Park.

F. d'A. Furtado, St. Michael's, Azores.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., 9, Cleveland Row, St. James's, London, S.W.

Edward Hailstone, F.S.A., Walton Hall, Wakefield.

Wm. Hartley, D'Urban, Port Natal.

The Lord Bishop of Hereford, The Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Stoneleigh, Leigh Woods, near Bristol.

Capt. James Holt, A.D.C., &c., &c., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

Sir John Lubbock, Bart., M.P., D.C.L., LL.D., F.R.S., High Elms, Hayes, Kent.

Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., &c., 21, Eccleston Square, Pimlico, London, S.W.

The Chevalier Michelotti.

H. G. Moore, Glenmark, New Zealand.

Sir Charles Nicholson, Bart., D.C.L., &c.

The Right Rev. the Bishop of Nottingham, Leasingham, Sleaford.

Lawrence Oliphant, F.R.S., London.

Richard Owen, M.D., D.C.L., LL.D., F.R.S., Foreign Associate of the Institute of France, &c., British Museum, London.

C. C. Oxley, Minster House, Ripon.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

Henry Seebohm, F.L.S., F.Z.S., 6, Tenterden Street, Hanover Square, London, W.

Prof. Gustave Seyffarth, A.M., D.D., Ph.D., 1263, 4th Avenue, New York, U.S.

Col. Edmund Smyth, Welwyn Grange, Hertfordshire.

The Right Rev. the Metropolitan Bishop of Sydney, New South Wales.

John Robert Tennant, Kildwick Hall.

Edward Harry Woods, Rosario, in the Argentine Republic.

The Lord Archbishop of York, Bishopthorpe.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

June 28/87

LEEDS
Philosophical & Literary Society.

THE ANNUAL REPORT

For 1885-6.

Se Le 1

THE

SIXTY-SIXTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY SOCIETY;

AT THE

CLOSE OF THE SESSION 1885-6,

Read at the Annual Meeting, May 4th, 1886.

LEEDS:
GOODALL AND SUDDICK, COOKRIDGE STREET.

MDCCCLXXXVI.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, Conversazione, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures and Conversazione. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, Lectures, and Conversazione, but not to business meetings; nor have they any transferable tickets to admit visitors:

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULE
RESPECTING THE PROPERTY OF THE SOCIETY.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-SIXTH SESSION.

At the last Annual Meeting, the Members desired the Council to consider the expediency of altering the hour of general meetings, and of admitting visitors to lectures on payment of single fees. On the first point, the Council have deemed it, on the whole, wise to fix the meeting hour at eight, instead of half-past seven, and it is believed that this alteration has been welcome to the majority of Members and Subscribers who live in or near the town. To others at a distance, however, the later hour is inconvenient, and the Council regret that some resignations have occurred in consequence of the change. The second subject referred to at the Annual Meeting is one which has been fully discussed by the Council, who have come to the conclusion that it would not tend either to the strength of the Society or to the advantage of its funds to permit attendance at particular lectures on payment of a separate fee. Members of the Society (whether Proprietary, New Proprietary, Ordinary, or New Ordinary) have the privilege of introducing one or two visitors to each meeting, and Subscribers who desire to obtain a similar right can at present secure it on easy terms by qualifying as Members.

The roll of Members and Subscribers shows a loss of 33 during the year.

A comparison of the numbers at the present time and of a year ago gives the following results :—

	1885.	1886.
Original Proprietary Members (78 shares) ...	72	71
New Proprietary Members (121 shares)... ...	96	96
Ordinary Members	5	4
New Ordinary Members	85	83
Annual Subscribers of £1 1s.	230	206
Annual Subscribers of 7s. 6d.	213	208
Total	701	668

It will be seen that the class of Ordinary Members, that is, Members holding shares of £3 3s., and paying an annual subscription of £2 2s., is gradually dying out, preference being almost always given by an intending purchaser of a share in the Society, who does not wish for more than one transferable ticket, to the New Ordinary Shares, which may now be bought for about £6, with the yearly subscription of £1 1s. attaching to them.

The best thanks of the Society are due to the following Lecturers, whose valuable papers were contributed to the Society without charge, viz.: the Marquis of Ripon, the Bishop of Ripon, Mr. E. Atkinson (President of the Society), and Dr. C. M. Chadwick.

The following is a complete list of Papers :—

1. "The Native States of India." The Most Hon. the Marquis of Ripon, K.G. *Read Oct. 20th*, 1885.

2. "The Hittite Empire: the Story of a Long-forgotten Nation." Rev. Canon H. B. Tristram, D.D., F.R.S. *Read Nov. 3rd*, 1885.
3. "New Red Sandstone; an Episode in the Building of England." Prof. T. G. Bonney, D.Sc., F.R.S., President Geological Society. *Read Nov. 17th*, 1885.
4. "Mount Kilimanjaro, the Snow-clad Mountain of Eastern Equatorial Africa." H. H. Johnston, F.Z.S., F.R.G.S. *Read Dec. 1st*, 1885.
5. "Illustrated Journalism, and the work of a Special Artist." Wm. Simpson, R.I., F.R.G.S., Hon. Assoc. R.I.B.A. *Read Dec. 15th*, 1885.
6. "Self-help in Plant Life." Edward Atkinson, F.L.S., President of the Society. *Read Jan. 12th*, 1886.
7. "Dante." Right Rev. the Lord Bishop of Ripon, D.D. *Read Jan. 19th*, 1886.
8. "The Migration of Birds." W. E. Clarke, F.L.S. *Read Feb. 2nd*, 1886.
9. "The Education of the Hand." Sir J. Crichton Browne, M.D., LL.D., F.R.S. *Read Feb. 16th*, 1886.
10. "Modern Views of Electricity." Prof. Oliver Lodge, D.Sc. *Read March 2nd*, 1886.
11. "Mechanical Aids to Calculation." C. V. Boys, A.R.S.M. *Read March 16th*, 1886.
12. "The Art of Engraving, from its origin to the commencement of the Sixteenth Century." Louis Fagan. *Read April 6th*, 1886.
13. "M. Pasteur and his work." C. M. Chadwick, M.A., M.B. *Read April 21st*, 1886.

Lord Ripon's Paper has, with his Lordship's permission, been published by the Society, and a copy of it has been sent to each Member and Subscriber.

The Annual Conversazione was held on the 8th of December, 1885, when a collection of maps, plans, views, books, deeds, and other records and objects to illustrate Old

Leeds, with portraits of Old Leeds Worthies, was exhibited. The Society was indebted to Messrs. Hathorn, Davey, and Co., and to Mr. Wilson Hartnell, for a very pleasant illumination of the library by electricity. Recitations were given in the Lecture Hall in the course of the evening by Mr. G. K. Paley.

During the past year the general collection of Birds has received special attention, and considerable outlay has been necessary in renewing decayed specimens, and altering the old cases. Instead of a single series, arranged in zoological order, the selected birds will now be grouped according to the regions which they inhabit, and the material at command will allow the bird-fauna of each region to be effectively illustrated. This part of the work has made substantial progress, and already gives some notion of the finished result. The specimens have been cleaned or replaced, and new printed labels supplied. It is hoped that the alteration of the cases, while contributing to the suitable grouping of the birds, will materially reduce the quantity of dust, which has been both troublesome and destructive in the past.

The completion of the scheme requires the arrangement of collections to illustrate mimicry, seasonal variation, sexual differences and other special subjects, which have still to be dealt with. The Mammalia, Reptiles, Amphibia and Fishes have been cleaned, and the cases repaired where necessary. Additional help in cleaning was found needful, to enable the Museum to be kept in good order, and the Council have sanctioned the engagement of a junior assistant for this purpose.

With the view of making the Museum more useful for popular instruction, and also of giving information upon a variety of local topics, a course of Saturday Afternoon Museum Lectures has been given during the winter by the gentlemen connected with the Society, whose names are appended. Admission was by the penny paid at the door for entry to the Museum. The attendance at these lectures exceeded the expectation of the Council, and will encourage a repetition of the course.

Jan. 23.	PROF. MIALL, F.L.S. ...	"Extinct Wild Beasts of Yorkshire."
Jan. 30.	C. HARGROVE, M.A. ...	"Mummies."
Feb. 6.	S. LUPTON, M.A., F.C.S.	"Joseph Priestley."
Feb. 13.	W. E. CLARKE, F.L.S. ...	"The Migration of Birds."
Feb. 20.	PROF. MIALL, F.L.S. ...	"Weeds."
Feb. 27.	F. W. BRANSON, F.C.S....	"The Microscope."
Mar. 6.	J. W. CONNON, F.R.I.B.A.	"Kirkstall Abbey."

The only expense which the Society incurred about these lectures was the cost of printing and of lantern exhibitions.

As Mr. Connon's lecture contained a large amount of useful information in a convenient form, the Council have obtained the author's permission to publish it as a Guide to Kirkstall Abbey.

The finances of the Society have suffered by the death of Mr. T. Emsley, of Burley-in-Wharfedale, who had for 18 years regularly contributed £10 a year to the Society's funds.

The debt due to the Treasurer has increased during the year from £49 3s. 11d., to £76 1s. 11d.

The number of visitors to the Museum during the year was 24,548, as against 26,347 of the year before.

The Society has lost the services of three valuable Members of the Council by the removal from Leeds of the Very Rev. Dr. Gott, Prof. T. E. Thorpe, Ph.D., F.R.S., and Prof. A. W. Rücker, M.A., F.R.S.

The Council have received from the Very Rev. Dr. Gott, Dean of Worcester, the resignation of his office of Hon. Curator in Ethnology and Works of Art, in consequence of his removal from Leeds. They desire to record their deep regret at the loss of a colleague who has rendered the Society many important services. Dr. Gott's family were founders of the Society, and for three generations have been conspicuous in the generosity and steadfastness of the support they have given it. Dr. Gott has been a member of the Council since 1870, and from 1881 to 1883 he filled the office of President. In 1873 he read a paper on "The History of Printing," with Illustrations of Early Printed Books; and in 1881, an Inaugural Address on "The Art of Engraving." On various occasions Dr. Gott has favoured the Society by the loan of large and valuable series of books and engravings from his choice collections. On behalf of the Society, the Council offers Dr. Gott its best wishes in the important position upon which he is now entering.

Prof. Thorpe filled the office of Honorary Librarian, and a complete re-arrangement of the Library was effected under his control. Besides this, his assistance in the preparation of the Lecture Lists and of the Exhibits of the Conversazione, has been of great value for several years.

Prof. Rücker was one of the Hon. Secretaries from 1876 to 1886, and rendered the Society conspicuous services. The part which he took in the discussions at the Society's meetings was always welcome. Whilst regretting the loss of colleagues holding such distinguished positions in experimental science as Professors Thorpe and Rücker, the Council have the conviction that the impulse which they gave to the local interests of science in Leeds will not soon be lost.

The following names have been removed from our roll by death during the year:—

Mr. Wm. Sykes Ward, F.C.S., was actively engaged in the work of the Society throughout the greater part of a long lifetime, holding the office of one of the Honorary Secretaries from 1840 to 1869. This long period in the Society's history exhibits revolutionary changes in nearly all aspects of its affairs; its system of lectures has been changed from the original plan of mutual lecturing by its members, to the present arrangement of depending chiefly upon distinguished men from all parts of the country; the building is treble the size of what it was prior to 1862, and the Museum is greatly enlarged in extent, but has gained still more by its present systematic classification. During this period, Mr. Sykes Ward read

many papers before the Society and was otherwise intimately associated with its operations, finding them in harmony with the remarkable versatility of his interest in Science. Mr. Ward was an early explorer in such fields as telegraphy, atmospheric railways, photography, and in various chemical subjects, and his inventions were the subjects of several patents. He was an enthusiastic lover and student of music. From failing health, Mr. Ward spent the last few years of his life in retirement, continuing, however, his scientific pursuits.

Mr. John Ralph, M.A., was a member of the Society's Council from 1875 to 1885. A literary man, he settled in Leeds in 1866 as editor of the "Yorkshire Post." His college record was brilliant, and included the Presidency of the Oxford Union, in succession to the present Viscount Sherbrooke, and immediately before the post was filled by the Marquis of Salisbury. Mr. Ralph's work on "The Lives of the Laureates" bears witness to his high literary attainments; his paper on "Pindar, and the Greek Lyric Poets," read before the Society, showed ripe scholarship and critical judgment.

From the list of Honorary Members, two distinguished names have been lost by death :—

The Rt. Rev. James Russell Woodford, D.D., Bishop of Ely, was intimately associated with the Society during the period of his vicariate of Leeds. For two years, 1872 to 1874, he was President of the Society, delivering a very able inaugural address, on "Literary Life at the beginning of

the Eighteenth Century." Upon the elevation of Canon Woodford to the see of Ely, the Society elected him an Hon. Member, to mark its sense of the obligations which he had conferred upon it, and personal esteem for his character.

The Rt. Hon. W. E. Forster, M.P., LL.D., F.R.S., was long one of the most prominent of Yorkshiremen. On March 30th, 1858, he read before this Society a paper entitled, "The Condition of India under British Rule." Mr. Forster's public career may be said to have commenced at this period, and he shortly afterwards entered the House of Commons, in which he was destined to be a conspicuous figure. This is not the place to speak of those questions of party politics so constantly associated with Mr. Forster's name, but it is fitting to refer to him as the author of the Elementary education Act of 1870, which, for the first time, brought the right to education within the reach of every child in the kingdom. Mr. Forster's force of character and straightforward earnestness of purpose gained for him the esteem of both political friends and foes, and the death of few public men has been attended by such marked and general evidence of public sorrow.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1885.

1885.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	37·8	29·688	1·29
February	42·4	29·479	2·14
March	40·6	29·898	1·31
April...	47·2	29·635	1·24
May	47·3	29·583	2·16
June	56·9	29·876	2·78
July	61·6	30·013	0·89
August	56·2	29·822	0·85
September	53·9	29·638	2·26
October	45·6	29·519	4·15
November	43·1	29·730	2·09
December	39·5	30·087	0·52

The mean monthly temperature was 47·6.

The mean monthly height of the barometer was 29·747 inches.

The total rainfall for the year was 21·68 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 84° on July 26th; and the minimum 22° on December 11th.

The greatest barometric pressure was on March 14th, being 30·5 inches, the temperature of the mercury being 58°, the least pressure was on January 11th, being 28·650, the temperature of the mercury being 50°.

The greatest fall of rain (during 24 hours) was on Oct. 23rd, being ·96 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR 1885-6.

	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1885 ...	...		...	1	17	0
,, Receipts for the Year ending April 30th, 1885, viz.—						
Annual Subscriptions, viz.—						
83 New Proprietary Members, at 21/- ...	87	3	0			
4 Original Ordinary do. 42/- ...	8	8	0			
73 New Ordinary do. 21/- ..	76	13	0			
191 Annual Subscribers, at 21/- ...	200	11	0			
23 New do. 21/- ..	24	3	0			
180 Annual Subscribers, at 7/6 ...	67	10	0			
33 New do. 7/6 ..	12	7	6			
Arrears	44	2	0			
				520	17	6
Rent, viz.—						
Cellars	40	0	0			
Lecture Room	183	1	0			
				223	1	0
Receipts from Visitors to Museum	102	5	8			
Ditto do. Conversazione ...	34	3	6			
				136	9	2
Sale of Catalogues	0	8	4			
Sundries	1	10	0			
				1	18	4
Sale of Forfeited Share				6	0	0
,, Balance Due to Bank				76	1	11
				£966	4	11

	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1885				49	3	11
,, Payments during the Year ending April 30th, 1885, viz.—						
Repairs and Alterations	32	8	7			
Rates and Taxes	6	4	3			
Fire Insurance	13	15	0			
Coals, &c.	16	15	7			
Gas	20	17	9			
Cleaning	7	8	9			
				97	9	11
Salaries	382	15	0			
Fee to Auditor	2	2	0			
				384	17	0
Collections, viz.—						
Zoological	94	17	2			
Library	40	6	5			
				135	3	7
Postages	13	13	1			
Advertising and Printing	88	12	2			
Lectures	108	18	9			
Conversazione Expenses	71	2	11			
Bank Commission and Interest...	1	18	0			
Sundries	12	1	9			
				296	6	8
Furniture				2	4	0
,, Balance in Hand				0	19	10
				£966	4	11

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 4th, 1886.

BEEVERS & SPICE,
CHARTERED ACCOUNTANTS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1885-6.

ZOOLOGY.

Nineteen skins of Oriental Birds	Per Dr. Clifford Allbutt, F.R.S.
A number of Neotropical, Oriental, and Ethiopian Birds' Skins, from Mr. Whiteley, Woolwich	Purchased.
Bank Vole (Arvicola agrestis)	Dr. Eddison.
Burbot (Lota vulgaris) and Chub (Leuciscus cephalus)	J. A. Hirst, Esq.
A number of Cingalese Reptiles in spirit	R. Paver-Crow, Esq.
Long-tailed Field-Mice (Mus sylvaticus)	J. E. Mason, Esq.
Mantis	J. R. Penistone, Esq.
Living Larvæ of British Lepidoptera	Mr. Jno. Grassham.
African Grey Parrot (Psittacus erythacus)	Mr. Wardman.

ETHNOLOGY.

Hindustani Dagger	The late Edwd. Bond, Esq.

Painting (unfinished) of the interior of St. John's Church, in 1870, by Cruse	D. H. Atkinson. Esq.

PUBLICATIONS.

Catalogue of Lizards in the British Museum, Vol. II., by G. A. Boulenger Catalogue of Fossil Mammalia in the British Museum, Pt. II., by R. Lydekker ..... List of the Cetacea in the British Museum, by W. H. Flower, L.L.D., F.R.S., &c. ..... List of Palæozoic Plants in the British Museum, by Robt. Kidston, F.G.S.	British Museum.

Contributions to the Palæontology of the Yorkshire Oolites. By W. H. Hudleston, M.A., F.R.S., &c.	The Author.
Dun Echt Observatory Publications: Mauritius Expedition, 1874: Determinations of Longitude and Latitude	The Earl of Crawford and Balcarres.
Cape Catalogue of Stars, 1850	The Cape Astronomer Royal.
The Discovery of the Periodic Law. By J. A. R. Newlands.....	The Author.
Ralph Thoresby, the Topographer: His Town and Times. Vol 1. By D. H. Atkinson	Purchased.
Diagrams representing Diurnal Range in Magnitude and Direction of the Magnetic Forces in the Horizontal Plane, at Greenwich, 1841—1876 ...	The Astronomer Royal.
Harris's Lexicon Technicum, or Dictionary of Arts and Sciences. Two Vols., 1716	J. B. Barting, Esq.
Reports from the Consuls of the United States on the Commerce, &c., of their Consular Districts.....	Department of State.
Handbook to the Department of Prints and Drawings in the British Museum. By Louis Fagan ..... Raffaello Sanzio: His Sonnet in the British Museum. By Louis Fagan A Catalogue Raisonné of the Engraved Works of William Woollett. By Louis Fagan ..... The Art of Michael Angelo Buonarroti, as Illustrated by the various collections in the British Museum. By Louis Fagan.....	The Author.
Memoirs of the National Academy of Sciences, U.S.A., Vol. III.	The Academy.
Fauna der Gaskohle, Vol. II., Pt. II., by Dr. Anton Fritsch	Purchased.
Greenwich Observations, 1883	The Astronomer Royal.

Fourth Annual Report of the United States Geological Survey, 1882-83, by J. W. Powell	Department of the Interior.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Journal of the Chemical Society.....	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei ...	The Society.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.
Proceedings of the Zoological Society	Zoological Society.

ANNUALLY.

Philosophical Transactions	Purchased.
Annual Report of the Yorkshire Philosophical Society, 1884	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society, 1883-4.....	Glasgow Philosophical Society.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year)	American Philosophical Society.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings and Transactions of the Royal Irish Academy	Royal Irish Academy.
Transactions of the Manchester Geological Society.....	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Report of the Middlesex Hospital ...	The Hospital.
Calendar and Annual Report of the Yorkshire College, Leeds	The College.
Annual Report and Publications of the Manitoba Historical and Scientific Society.....	Manitoba Historical and Scientific Society.
Transactions of the Yorkshire Naturalists' Union	
List of the Geological Society of London, for 1885.....	Geological Society.
Proceedings of the Birmingham Philosophical Society	Birmingham Philosophical Society.

Proceedings of the Royal Society of Edinburgh ..... Transactions of do.	Royal Society of Edinburgh.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society.....	Liverpool Geological Society.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Boston Society of Natural History, U.S.A..... Memoirs of do.	Boston Society of Natural History.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Reports and Papers of Meetings of the Architectural Societies of Lincoln and York	The Societies.
Scientific Proceedings of the Royal Dublin Society (several Parts) ..... Scientific Transactions do. (several Parts)	Royal Dublin Society.
Report of the Howard Association...	Howard Association.
Bulletin of the American Museum of Natural History, Vol. I., No. 6	American Museum.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of Harvard College ...	The College.
Annual Report of Harvard University	The University.

Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass., U.S.A.
Annual Report of the Birkenhead Literary and Scientific Society.....	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Proceedings of the Royal Society.....	Royal Society.
Contributions to Knowledge, Vols. 24 and 25	Smithsonian Institution.
Report of the Smithsonian Institution.	
Third Report of the Bureau of Ethnology	
Memoirs of the Manchester Literary and Philosophical Society	Manchester Literary and Philosophical Society.
Proceedings do.	
Journal of the Royal Dublin Society (about once a year).....	Royal Dublin Society.
Proceedings of the Royal Institution (2 parts a year)	Royal Institution of Great Britain and Ireland.
Papers and Proceedings of the Royal Society of Tasmania	Royal Society of Tasmania.
Proceedings and Transactions of the Royal Society of Canada	Royal Society of Canada.
Catalogue of Canadian Plants, Part II.	Dominion Government of Canada.
Geological Survey of Canada: Report of Progress, 1882—4	
Transactions of the Leeds Geological Association	The Association.
Report of the Kelvingrove Museum, Glasgow, 1884.....	Presented.
Proceedings of the Canadian Institute	The Institute.
Ocean and Air Currents, by T. D. Smellie.....	The Author.
Papers on various forms of Oceanic Animal and Vegetable Life, by Dr. Wallich	The Author.

Kongliga Svenska Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.
Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar	
Bihang till Kongliga Vetenskaps Akademiens Handlingar	
Lefuadsteckningar over Kongliga Svenska Vetenskaps Akademiens...	
Transactions of the Edinburgh Geological Society, 1884—5.....	The Society.
Report and Transactions of the Hull Royal Institution, 1884—5	The Institution.
Catalogue of the Library of the Royal Society of Tasmania.....	Royal Society of Tasmania.
Proceedings of the Liverpool Scientific Students' Association, 1884—5.....	The Association.
Proceedings of the Liverpool Literary and Philosophical Society	The Society.
Quarterly Journal of the Meteorological Society.....	H. Davey, Esq.
The Meteorological Record	
List of the Royal Meteorological Society	
Charter and Bye-Laws of the Royal Meteorological Society	
Journal of the Royal Geological Society of Ireland	The Society.
Report and Proceedings of the National Academy of Sciences, Washington.....	The Academy.
List of and Catalogue of the Library of the Chemical Society of London, 1886	The Chemical Society.

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28	Empson, Christopher	Beechwood, Sowerby Bridge.
48	Ford, J. R.	Shaw Lane, Headingley.
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46	George, Thomas Willington	Gledhow Grove.
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34, 35	Gott, Very Rev. John, D.D. (2 shares)	The Deanery, Worcester.
36-8	Gott, William Henry (3 shares)	Armley House.
61	Greenhow, Wm. T.	Newton Cottage, Chapel-Allerton.
39	Harding, T. R.	St. Ann's Tower, Headingley.
41	Heaps, Charles Denison	Avenue House, Woodhouse Lane.
40	Heaps, John William	Park View Villas, Cowper St.
42	Heaton, Beresford Rimington	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
47	Ingham, Constantine	5, Blenheim Terrace.
49	Jowitt, John	Harehills, Potternewton.
51	Kinnear, Thomas John, M.A.	The Abbey, Malton.
55	Luccock, Mrs.	54, North Street.
32	Lupton, Edward Basil	Moorlands, Headingley.
57	Lupton, Mrs. F.	Beechwood, Roundhay

53	Lupton, Francis Martineau, M.A.	Wellington Street.
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7	North, John	East Parade.
68	Nunneley, J. A., M.B.	22, Park Place.
69	Rhodes, John	Potternewton House.
70	Shepherd, John	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George	Springfield Mount.
52	Taylor, Benjamin	160, Briggate.
50	Taylor, John Charles	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs.	Scarborough.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler	Belvidere, Newton Road.
75	Walker, Edward	32, Springfield Mount.
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12	Wilson, Rev. Benjamin	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund	8, Osborne Terrace, Virginia Road.

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15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.
5, 6	Brown, George William (2 shares) .	Weetwood.
89	Buckton, Joshua .	Meanwood.
8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	3, Royal Parade, Cheltenham.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
19	Fairbairn, Sir Andrew, M.A., M.P. .	Askham Richard, near York.
20*	Farrer, James .	
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
118	Flitch, John R. .	Chapel-Allerton.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gott, Very Rev. John, D.D. (P) .	The Deanery, Worcester.

101-3, 106-10, 114-15	Gott, Wm. Henry (P) (10 shares) .	Armley House.
22	Hargrave, Charles .	St. Agnesgate House, Ripon.
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16	Harvey, William .	Spring Bank, Headingley.
81	Hatch, S. C. .	Oak Lodge, Headingley.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	North Hill Road, Headingley.
36	Hudson, Henry .	Oakwood, Roundhay.
120	Ingham, Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43*	Kitson, James .	
46	Kitson, J. Hawthorn .	Airedale Foundry.
47	Kitson, James .	Elmete Hall, Roundhay.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick Willm.	Woodfield, Wood Lane.
50*	Leather, J. Towlerton .	
53	Lupton, Arthur .	Headingley Hill.
95	Lupton, Arthur Greenhow	Wellington Street.
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56	Lupton, William Walter .	Newton Hill, Leeds.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P)(3 shares)	Wellington Street.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.

61	Marshall, John, M.A.	Headingley Lodge.
72	Marshall, John, F.R.A.S.	Church Institute.
62	Marshall, Stephen Albert, B.A.	Weetwood Hall.
24	Matthews, Rev. J. H. D., M.A.	Grammar School, Leeds.
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117	Middleton, Arthur	Hawk Hills, Chapel-Allerton.
29	*Milner, Henry B. W.	
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64	Nickols, Richard	Hill Top, Bramley.
67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, Henry	Weetwood.
28	*Passavant, P. W.	
82	Pearson, John Thomas	Moor House, Far Headingley.
93	Pebody, Charles	23, Albion Street.
11	Price, William Nicholson	Mount Pleasant.
38	*Ralph, John, M.A.	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John	Park Row.
105	Ryder, Charles	Westfield, Chapeltown.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, Edward	Gledhow Wood, Gledhow.
51, 121	*Stansfeld, T. W. (2 shares)	
70	Stewart, G. M.	
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. Pridgin, M.A., F.R.C.S.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
75	Tennant, Robert	
76	Tennant, Thomas	21, Blenheim Terrace.

78*	Tetley, F. W.	
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall	Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
71	Ward, John	Moor-Allerton House.
111	Watson, William Henry	Horsforth.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William Musgrave	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
17	Wilson, Richard	Commercial Street.
35	Wood, Richard	Cattall, near York.

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12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.

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2	Baines, Talbot, B.A.	Westfield, St. Michael's Road.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Cardigan Road.

6	Benson, John	.
7	Best, William Woodham	. 22, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	. The Yorkshire College.
8	Bolland, W. T.	. Oriel House, Scarborough.
10	Bousfield, Charles Edward	. St. Mary's Mount.
15	Bray, George	. Blackman Lane.
11	Briggs, Riley	. Springfield Mount.
75	Brunton, George	. Hillary Mount, Woodhouse Lane.
12	Carbutt, E. H., M.P.	. 19, Hyde Park Gardens, London, W.
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20	Eddison, Robert William	. The Willows, Adel.
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48	Fraser, Henry John	. Fairlea, Wood Lane, Headingley.
69	Fraser, James B.	. 44, Park Square.
24	Gascoigne, F. C. Trench	. Parlington Park, nr. Garforth.
25	Green, Prof. A. H., M.A.	. 14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A.	. 30, Hyde Terrace.
27	Hargrave, John	. St. Ann's Lodge, Burley, nr. Leeds.
28	Hepper, John	. Clareville, Headingley.
80	Holmes, Joseph	. Chemical Works, Crown Street.
81	Holroyd, James	. 4, College Road.
30	Holt, Joseph (P)	. Ogbeare Hall, Holsworthy, Devon
31	Illingworth, William	. Flower Bank, Burley.
33*	Irwell, Julius	.
32*	Irwin, Edwin	.
34	Jackson, W. L., M.P.	. Buslingthorp, Leeds.
67	Jefferson, Robert Pickering	. 39, Leopold Street, New Leeds.
63	Jowitt, Miss E. M.	. Woodfield, Newton Hill.
37	Kemplay, Miss	. Ridge House, Leeds.
86*	Lambert, Joseph	.

38	Lawson, Thomas	Newton Hill, Potternewton.
39*	Lawson, John	
41*	Ledgard, Mrs.	
88	Legard, Albert G., M.A.	Grosvenor Terrace, Headingley.
23	Lupton, Prof. Arnold, M.I C.E.	4, Albion Place.
44	McCheane, Miss	The Hollies, Headingley.
43	Manning, H. J.	
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Otley Road, Headingley.
47	Morley, Herbert Ogle	
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
58	Nicol, W. H.	2, Clarendon Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Chapeltown Road.
9	Reid, T. Wemyss	Cardigan Road.
22	Reynolds, Richard F.	Cliff Lodge, Hyde Park.
62	Riley, H. W.	King Street.
73	Rowley, Walter, C.E., F.G.S.	Alder Hill, Meanwood.
65	Rücker, A. W., M.A., F.R.S.	Errington, Clapham Park, London, S.W.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
76	Smithells, Prof. A., B.Sc.	The Yorkshire College.
70*	Somers, Francis	

71 Stables, James	.	Lane Ends, Horsforth.
36 Tennant, John	.	18, Albion Street.
18*Thornton, Charles	.	
77 Titley, Mrs. Anthony	.	Manor House, Victoria Grove.
78 Titley, T. A.	.	Oakley House, Gledhow.
79 Tottie, Mrs. J. W. (P)	.	Coniston Hall, Bell Busk, Leeds.
82 Walker, H. B.	.	Heath Cottage, Moortown.
83 Ward, Edmund	.	Denison Hall, Hanover Square.
57 Ward, George, F.C.S.	.	Buckingham Terrace, Headingley.
90 Ward, William	.	32, Hyde Terrace.
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87*Young, John	.	

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THE ANNUAL REP

For 1886-7.

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SIXTY-SEVENTH REPORT

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PHILOSOPHICAL & LITERARY

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AT THE

CLOSE OF THE SESSION 1886-7,

Read at the Annual Meeting, May 3rd, 1887.

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THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, Conversazione, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures and Conversazione. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, Lectures, and Conversazione, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-SEVENTH SESSION.

THE Council were encouraged by the prospect of a larger income than usual this year, from the letting of the Lecture Hall, to undertake the important work of improving its ventilation; and a contract was entered into with Messrs. Hathorn, Davey & Co., to provide the machinery and fittings for lighting the Lecture Hall and Library by electricity, as well as for a ventilating fan. The former part of this contract has been carried into execution, and the Members and Subscribers who have attended the lectures during the session must have been pleased with the great improvement which this has effected. The latter part of the work has been deferred for the present, owing to structural difficulties, not altogether without the hope that it may prove unnecessary to have it executed, as the substitution of electricity for gas, for lighting purposes, has had the expected effect of greatly improving the quality of the air of the room.

It was intended to defray the cost of these alterations out of the ordinary income of the Society, and the Council still hope that it may be possible to do this, in the course of a few years, by the exercise of great economy; but it is

somewhat disappointing to find that, except in the case of the rent of the Hall, the receipts are considerably less this year than the average amount. The Subscriptions amount to £74 less than last year; and the payments by visitors to Museum and Conversazione, about £14 less.

The number of Members and Subscribers at present constituting the Society compares with that of last year as follows :—

	1886.	1887.
Original Proprietary Members (78 shares) ...	71	71
New Proprietary Members (121 shares)... ...	96	98
Ordinary Members	4	4
New Ordinary Members...	83	83
Annual Subscribers of £1 1s.	206	179
Annual Subscribers of 7s. 6d.	208	176
Total	668	611

In fulfilling their duty of considering whether the lessened numbers of Annual Subscribers can be explained by any special cause, the Council have given attention to the altered hour of the Evening Meetings of the Society. They regret to know that in a very limited number of cases, the alteration from 7.30 to 8 p.m. has lost for the Society the support of Subscribers who depended upon railway trains for returning home. But these instances were so few that the Council could not consider them as outweighing the strong representations of many active Members of the Society, whose presence was almost essential to the success of its meetings, and who complained of the great inconvenience of the earlier hour. The Council attach much importance to the wise settlement of this question in the interests of the Society, and

they regret that no authoritative mandate has yet been given by the Members and Subscribers. It may be recollected that a few years since circulars of inquiry were issued, and that the replies showed a precisely equal vote for each hour offered for choice. The Council are very anxious to know the present wishes of Members in the matter.

The lectures delivered at the general meetings of the Society were as under :—

1. "The Art of Government." Thomas Marshall, M.A., President of the Society. *Read Nov. 2nd*, 1886.
2. "Persian and Arabian Ceramic Art." Henry Wallis. *Read Nov. 16th*, 1886.
3. "Hans Christian Andersen." Edmund Gosse, M.A., Clark Lecturer at Trinity College, Cambridge. *Read Dec. 7th*, 1886.
4. "The Modern History of the Chemical Elements." Arthur Smithells, B.Sc., Professor of Chemistry, Yorkshire College. *Read Dec. 21st*, 1886.
5. "Lawlessness." A. V. Dicey, M.A., B.C.L., Vinerian Professor of English Law, University of Oxford. *Read Jan. 18th*, 1887.
6. "Colour." G. W. Balfour, M.P. *Read Feb. 1st*, 1887.
7. "Socrates, as a Teacher and Humorist." Rev. Canon MacColl, M.A., F.R.S.L. *Read Feb. 15th*, 1887.
8. "The Three States of Matter." A. W. Rücker, M.A., F.R.S., Professor of Physics, Normal School of Science and Royal School of Mines. *Read March 1st*, 1887.
9. "Dogs, Ancient and Modern." J. E. Harting, F.L.S., F.Z.S. *Read March 15th*, 1887.
10. "Burma." J. Annan Bryce, M.A. *Read April 5th*, 1887.
11. "Some Religious Houses in the Neighbourhood of Leeds." Rev. A. Jessopp, D.D. *Read April 19th*, 1887.

The lectures by the President, Prof. Smithells, Mr. Balfour, M.P., and Prof. Rücker, were given to the Society without fee, and merit the hearty thanks which were voted to the lecturers at the time of their delivery.

The Conversazione took place at a later date than usual, owing to the engagement of the Lecture Hall for another purpose in December. The meeting was held on the 11th of January, 1887, when an interesting exhibition of photographic processes, suitable for book illustration, was shown. The special thanks of the Society are due to Mr. A. S. Dixon, who lent a collection of valuable pictures sufficient to occupy the wall space of the Library. The exhibition remained open for three days after the Conversazione, to enable Members and others to visit it at their leisure.

A second series of Saturday Afternoon Museum Lectures was given during the year, in the following order :—

1887.		
Feb. 12.	S. Lupton, M.A. ...	"Glass."
Feb. 19.	Prof. Miall	"The Animal Life of the Leeds River."
Feb. 26.	Prof. Green, M.A. ...	"Fossil Trees."
Mar. 5.	C. H. Bothamley ...	"The Alchemists."
Mar. 12.	Rev. C. Hargrove, M.A.	"Idols."
Mar. 19.	H. D. Berridge, M.A.	"Sound."
Mar. 26.	W. E. Clarke... ...	"The Wild Quadrupeds of Yorkshire."

The attendance at most of these lectures was very good, and the best thanks of the Society are due to the various gentlemen who so kindly undertook them.

The number of visitors to the Museum was 1,386 less than the year before, viz.:—23,162.

During the past year, considerable progress has been made with the rearrangement of the general collection of Birds. The expense necessary to complete some of the groups has delayed the completion of the scheme, but the collection is now sufficiently developed to give a fairly adequate notion of the families of Birds and of their geographical distribution. Each family is represented by a few selected examples, and a special map of its distribution is given. The groups characteristic of each region are explained in large printed charts, each of which is illustrated by a map.

The collection of Reptiles and Amphibia has been cleaned, remounted, and relabelled.

Some progress has been made in the cleaning and remounting of the Fossil collection, which has not been remounted for fifteen years. The completion of this task will occupy a considerable part of the next year.

The cases in which the Ethnological collection is contained have been repainted, and the objects cleaned.

A number of live larvæ of British and foreign Lepidoptera, have been exhibited during the summer months. This exhibition, which appears to be of considerable interest to the visitors, has been repeated for several years, and gains steadily in extent and variety.

A live specimen of the Black Rat—for which we are indebted to Mr. A. D. Bartlett, of the Zoological Society,

London—is now to be seen in the Museum. This interesting animal, the Rat, or Raton, of old England, differs conspicuously from the fiercer and larger Brown Rat. Besides the difference in size and colour, it has larger ears and a longer tail. Down to about 1750 the Black Rat was the species common in England and Western Europe, but since that time the Brown Rat—first observed by Pallas, in 1727, on the Volga—has replaced it with great rapidity and com pleteness. The Black Rat is now a rare animal, occasionally found in seaport towns, where it seems to be imported from time to time.

In addition to the annual volumes of the various serials, 113 books have been added to the Library by purchase or presentation; the bound serials, chiefly scientific, which form an important and valuable feature of the Library, have been rearranged during the year.

During the past year, a new subject has been added to those accepted by the Society as matters for record in relation to meteorology. Observations have been taken for about eight months by "Jordan's Photographic Sunshine Recorder," the results being exhibited daily in the window of the Museum. The records of bright sunshine observed at Cliff Road are also shown, and both series, with a third set of results from Lawnswood, Adel, are now published weekly by the newspapers. This new inquiry promises to be one of the most useful, as well as interesting, of the departments of meteorology.

The Council desire that the Society should formally recognise the services of Prof. T. E. Thorpe, Ph.D., F.R.S.,

and Mr. T. Wemyss Reid, by the addition of their names to the list of Honorary Members. A third name would naturally be also proposed did not Prof. A. W. Rücker, M.A., F.R.S., still continue an Ordinary Member of the Society.

By the removal from Leeds of Mr. Wemyss Reid during the past year, his former colleagues have lost the assistance of an accomplished lecturer, and an able adviser in all matters connected with literature.

During the year, one who for more than forty years was a prominent member of the Society has passed from among us. Though actively engaged in professional and social duties, Dr. Charles Chadwick, J.P., F.R.C.P. (Lond. and Edin.) was a member of our Council from 1839 to 1875, held the office of President for two years (1865-7) and that of Vice-President for four years. He read four papers before the Society—"On Certain Atmospheric Phenomena," April 3rd, 1840; "On Halos and Asteroids," November 17th, 1843; "On Prognostics in Meteorology," March 7th, 1845; choosing as the subject of his Presidential Address, "A correct estimate of facts the real basis of Science," October 16th, 1866.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1886.

1886.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in inches.
January	35·9	29·383	3·54
February	34·8	29·978	0·53
March...	39·1	29·839	2·03
April	44·5	29·746	1·70
May	49·1	29·746	4·08
June	55·1	29·812	0·88
July	60·5	29·920	5·72
August	60·4	29·632	1·87
September	55·8	29·851	1·16
October	51·5	29·625	3·80
November	44·4	29·696	1·66
December	36·0	29·435	3·85

The mean monthly temperature was 47·2.

The mean monthly height of the barometer was 29·721 inches.

The total rainfall for the year was 30·82 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 82° on July 2nd and August 30th; and the minimum 18° on March 7th.

The greatest barometric pressure was on November 24th, being 30·580 inches, the temperature of the mercury being 58°; the least pressure was on December 8th, being 27·828, the temperature of the mercury being 55°.

The greatest fall of rain (during 24 hours) was on July 26th, being 2·30 inches: the gauge overflowed at this point.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street. 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the Year 1886-7.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1886		—		0	19	10
,, Annual Subscriptions, viz.:—						
87 New Proprietary Members, at 21s. ...	91	7	0			
4 Original Ordinary do. 42s. ...	8	8	0			
68 New Ordinary do. 21s. ...	71	8	0			
175 Annual Subscribers, at 21s. ...	183	15	0			
9 New Annual Subscribers, at 21s. ...	9	9	0			
170 Annual Subscribers, at 7s. 6d. ...	63	15	0			
11 New do. at 7s. 6d. ...	4	2	6			
,, Arrears	14	8	0			
				446	12	6
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	270	6	0			
				310	6	0
,, Receipts from Visitors to Museum	96	10	2			
,, Do. do. Conversazione ...	26	0	6			
				122	10	8
,, Sale of Catalogues	0	18	4			
,, Sundries	1	17	0			
				2	15	4
,, Sale of Forfeited Shares		...		15	0	0
,, Balance Due to Bank...		...		360	19	6
				£1,259	3	10

PAYMENTS.	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1886 ...		—		76	1	11
,, Repairs and Alterations	35	2	10			
,, Rates and Taxes	5	4	8			
,, Fire Insurance...	13	15	0			
,, Coals, &c.	20	6	10			
,, Gas	22	9	0			
,, Cleaning	10	9	9			
				107	8	1
,, Salaries...	406	0	0			
,, Fee to Auditor...	2	2	0			
				408	2	0
,, Collections, viz.:—						
Geological	2	2	9			
Zoological	61	5	7			
Library	29	4	8			
				92	13	0
,, Postages	6	15	8			
,, Advertising and Printing	71	5	5			
,, Lectures	86	2	5			
,, Conversazione Expenses	71	1	4			
,, Bankers' Commission...	4	12	0			
,, Sundries	16	9	2			
				256	6	0
,, Furniture	3	1	8			
,, Scientific Apparatus	5	12	6			
,, Electric Lighting	309	7	0			
				318	1	2
,, Balance in Hand				0	11	8
				£1,259	3	10

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 18th, 1887.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1886-7.

ZOOLOGY.

A small collection of Marine Fishes from Gibraltar	R. D. Darbishire, Esq., Manchester.
Creeper *(Certhia familiaris)*.....	John Marshall, Esq.
Lampern *(Petromyzon fluviatilis)* ...	W. Eagle Clarke.
Various British Fresh-water Fishes...	Mr. John Grassham.
Skin of Pelican *(Pelecanus onocrotalus)*, from Suez	J. H. Gurney, Junr., Esq.
General collection of Shells	Miss Stewart, London.
A living specimen of the Black Rat *(Mus rattus)*	A. D. Bartlett, Esq., London.

PUBLICATIONS.

Catalogue of Birds in the British Museum, vol. xi., by Dr. P. L. Sclater, M.A., F.R.S.....	British Museum.
Catalogue of Fossil Mammalia in the British Museum, Part III., by R. Lydekker	
Catalogue of Lepidoptera Heterocera in the British Museum, Part VI., by A. G. Butler.	
Catalogue of the Blastoidea in the British Museum, by R. Ethridge, Junr., and Dr. Herbert Carpenter, F.R.S.	
Catalogue of Books in the Galleries of the Reading Room of the British Museum.....	
An Introduction to the Study of Meteorites, with a List of Meteorites in the British Museum	
Guide to the Galleries of Geology and Palæontology in the British Museum	

The Ancient Sculptured Shaft in the Parish Church at Leeds, by the Rev. G. F. Brown, B.D.....	The Author.
Geographical Distribution of Animals, by A. R. Wallace; 2 vols.	Purchased.
L'Histoire Naturelle de l'Oryctologie, qui Traite des Terres, des Pierres, des Metaux, des Mineraux, et autres Fossiles, 1755.....	Thomas Hewson, Esq.
Observations of the International Polar Expeditions, 1882-3. Fort Rae	Her Majesty's Government.
Canadian Economics.....	Montreal Committee, Brit. Association.
Agriculture of Peasantry of Eastern Russia, by H. Ling Roth ..... Continental Irrigation, by H. Ling Roth	The Author.
Cape Meridian Observations, 1879-81	Cape Astronomer Royal.
Greenwich Observations, 1884.....	The Astronomer Royal.
Edinburgh Astronomical Observations, 1877-86.....	Her Majesty's Government.
The Journal of William Darling, Grace Darling's Father, from 1795-1860.....	D. H. Atkinson, Esq.
Annals of the Royal Observatory, Cape of Good Hope, Vol. II., Pt. I. Observations of the Great Comet, 1882	Cape Astronomer Royal.
What I Believe, by Leon Tolstoi ...	Mr. Elliot Stock.
Life and Works of Thomas Graham, D.C.L., F.R.S., by Dr. Angus Smith, F.R.S.	Presented.
Histoire Naturelle des Poissons, par Cuvier and Valenciennes, Tomes 16 et 17.....	Purchased.
Herculanensium Voluminum Quæ Supersunt. Neapoli, 1793-1832, 4 vols.	Purchased.

Fifth Annual Report of the United States Geological Survey, 1883-84, by J. W. Powell	Department of the Interior.
The Literary Life of Gustavus Seyffarth, edited by Karl Knortz	The Editor.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei...	The Society.

BI-MONTHLY.

Journal of the Royal Microscopical Society.....	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical & Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.

Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.
Proceedings of the Zoological Society	Zoological Society.

ANNUALLY.

Philosophical Transactions	Purchased.
Annual Report of the Yorkshire Philosophical Society, 1886.....	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society, 1885-6	Glasgow Philosophical Society.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 Parts a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the American Academy of Arts and Sciences.....	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society..... Proceedings do. (several Parts a year)	American Philosophical Society.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings and Transactions of the Royal Irish Academy	Royal Irish Academy.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society.....	Leicester Literary and Philosophical Society.
Report of the Middlesex Hospital ...	The Hospital.
Calendar and Annual Report of the Yorkshire College, Leeds	The College.
Transactions of the Yorkshire Naturalists' Union	
List of the Geological Society of London, for 1886	Geological Society.
Proceedings of the Birmingham Philosophical Society	Birmingham Philosophical Society.

Proceedings of the Royal Society of Edinburgh	Royal Society of Edinburgh.
Transactions of do.	
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Monographs of the Palæontographical Society.....	Purchased.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Boston Society of Natural History, U.S.A.	Boston Society of Natural History.
Memoirs of do.	
Memoirs of the Royal Astronomical Society.....	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Reports and Papers of Meetings of the Architectural Societies of Lincoln and York.....	The Societies.
Scientific Proceedings of the Royal Dublin Society (several Parts).....	Royal Dublin Society.
Scientific Transactions do. (several Parts)	
Report of the Howard Association...	Howard Association.
Bulletin of the American Museum of Natural History.....	American Museum.
Annual Report, 1885-6	
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of Harvard College	The College.
Annual Report of the Birkenhead Literary and Scientific Society ...	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.

Proceedings of the Royal Society ...	Royal Society.
Report of the Smithsonian Institution	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society..... Proceedings do.	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Papers and Proceedings of the Royal Society of Tasmania	Royal Society of Tasmania.
Proceedings and Transactions of the Royal Society of Canada.....	Royal Society of Canada.
Geological Survey of Canada: Report of Progress, 1885	Dominion Government of Canada.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Canadian Institute	The Institute.
Proceedings of the Liverpool Scientific Students' Association, 1885-6	The Association.
Proceedings of the Liverpool Literary and Philosophical Society.....	The Society.
Journal of the Royal Geological Society of Ireland.....	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1884-5	The Club.
Bollettino delle Publicationi Italiane Ricevute per Diritto di Stampa, 1886-7	
Notas Psychologicas e Ethnologicas sobre o povo Portuguez ; por Arruda Furtado	The Author.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien, 1885 and 1886	The Society.
Bulletin des Procès-Verbaux de la Sociétié d'emulation d'Abbeville, 1877-85	The Society.

Proceedings of the Davenport Academy of Natural Science, Vol. IV.	The Academy.
Journal and Proceedings of the Hamilton Association, 1884-5.....	The Association.
Transactions of the Academy of Science of St. Louis, 1878-86	The Academy.
Annual Report, Middlesex Hospital, 1885	The Hospital.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, Vol. VIII., Part II.....	The Tyneside Naturalists' Field Club.
Memoirs of the Literature College, Imperial University of Japan, No. 1	The University.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1885-6	The Club.
Victorian Year-Book, 1885-6. By Henry Heylyn Hayter, C.M.G. ...	The Author.

LIST OF OFFICERS AND COUNCIL,

1887-8.

OFFICERS.

PRESIDENT	THOMAS MARSHALL, M.A.
VICE-PRESIDENTS . .	EDWARD ATKINSON, F.L.S. W. NICHOLSON PRICE.
HONORARY SECRETARIES .	RICHARD REYNOLDS, F.I.C., F.C.S. SYDNEY LUPTON, M.A.
TREASURER	HENRY OXLEY.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.R.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.A., M.D., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	THOS. SCATTERGOOD.
NATHAN BODINGTON, M.A.	ARTHUR SMITHELLS, B.Sc.
A. G. LEGARD, M.A.	J. HARTLEY WICKSTEED.
Rev. J. H. D. MATTHEWS, M.A.	J. J. WILLSON
CHARLES PEBODY.	EDMUND WILSON.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary . . .	W. F. HUSBAND, LL.B.
Assistant Curator .	W. E. CLARKE, F.L.S.

LIST OF MEMBERS AND SUBSCRIBERS,

1887-8.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Farnley.
4	Arthington, Robert	Headingley.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	Beckett, W., M.P. (2 shares)	Nun-Appleton, York.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	22, Sholebroke Avenue, Chapeltown Road.
11	*Brown, James	
31, 62	Brown, S. J. (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.

27	Ellershaw, Walter .	7, High Street, Hull.
28	Empson, Christopher .	Beechwood, Sowerby Bridge.
48	Ford, J. Rawlinson .	Quarry Dene, Weetwood.
29	*Ford, Mrs. .	
46	George, Thos. Willington	Gledhow Grove.
33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Very Rev. John, D.D. (2 shares) .	The Deanery, Worcester.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
44	Hirst, Joseph .	Wharfedale Lawn, Wetherby.
30	Horsfall, J., M.A., F.R.C.S.	Hillary House.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis M., M.A.	Wellington Street.
56	Lupton, Sydney, M.A. .	The Harehills, near Leeds.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	13, Belsize Avenue, London, N.W.
63	*Marshall, Henry Cowper	
64, 65	*Marshall, J. G. (2 shares)	
60	Marshall, John .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	Cookridge Hall.
67	Marshall, V. A. E., B.A.	Monk Coniston, Ambleside.
43	Nelson, George Hird .	Moorland House, Headingley.

7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	Shepherd, John .	Beech Grove House, Tadcaster.
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.
52	Taylor, Benjamin .	160, Briggate.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs. .	Scarborough.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	27, Hanover Square.
76	*Ward, William Sykes .	
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace, Virginia Rd.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	Starbeck, near Harrogate.
32	Atkinson, Edward, F.L.S.	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	3, Cavendish Road.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.

5, 6	Brown, G. W. (2 shares)	Weetwood.
89	Buckton, Joshua .	Meanwood.
8	Buckton, Walter .	49, Springfield Place.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
19	Fairbairn, Sir Andrew .	Askham Richard, near York.
20	*Farrer, James .	
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
118	Flitch, John R. .	Chapel-Allerton.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
87	Gott, Very Rev. Dr. (P)	The Deanery, Worcester.
101-3, 106-10, 114-15	Gott, Wm. Henry (P) (10 shares) .	Armley House.
22	Hargrave, Charles .	St. Agnesgate House, Ripon.
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William .	Spring Bank, Headingley.
81	Hatch, S. C. .	Clyde House, Westcombe Park Road, Blackheath.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	North Hill Road, Headingley.
51	Hoggard, Alfred .	25, Cavendish Road.
36	Hudson Henry .	Oakwood, Roundhay.
120	Ingham Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Parkhill, Wetherby.

43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir James, Bart.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick W. .	Woodfield, Wood Lane.
50	*Leather, J. Towlerton .	
53	Lupton, Arthur .	Headingley Hill.
95	Lupton, Arthur G. .	Wellington Street.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, William Walter .	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Wellington Street.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. (P).	Derwent Island, Keswick.
72	Marshall, John, F.R.A.S.	Church Institute.
62	Marshall, Stephen A., B.A.	
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	*Maude, Edmund .	
117	Middleton, Arthur .	Hawk Hills, Chapel-Allerton.
29	*Milner, Henry B. W. .	
65, 66	Nicholson, A.H. (2 shares)	
30	Nicholson, Marshall .	Middleton Hall, Beeston.
64	Nickols, Richard .	Hill Top, Bramley.
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	Moor House, Far Headingley.
93	Pebody, Charles .	23, Albion Street.
11	Price, William Nicholson	Mount Pleasant.

38	*Ralph, John M.A.	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John	Park Row.
105	Ryder, Charles	Westfield, Chapeltown.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, Edward	Gledhow Wood, Gledhow.
70	Stewart, G. M.	
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. Pridgin, M.A.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
75	Tennant, Robert	
76	Tennant, Thomas	21, Blenheim Terrace.
78	*Tetley, F. W.	
58	Thompson, Chas. F.	Beech Grove House, Leeds.
49	Thorp, John Hall	Headingley.
79	Turner, Richard B.	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
71	Ward, John	Moor-Allerton House.
111	Watson, William Henry	Horsforth.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph H.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
17	Wilson, Richard	Commercial Street.
35	Wood, Richard	Cattal, near York.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

2	Atkinson. J. H.	12, East Parade.
11	Ramskill, Josiah	29, Meadow Lane.
12	Scriven, William C.	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A.	Meanwood.
35	Armstrong, Prof. G. F.	The University, Edinburgh.
2	Baines, Talbot, B.A.	Westfield, St. Michael's Road.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Cardigan Road.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T.	Oriel House, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George	Blackman Lane.
11	Briggs, Riley	Springfield Mount.
75	Brunton, George	Hillary Mount, Woodhouse Lane.
12	Carbutt, E. H.	19, Hyde Park Gardens, London.
13	*Carter, Robert Meek	
14	Corson, George	Wood Lane, Headingley.
41	Crossley Thomas	Spring Hill, Cumberland Road.
26	Davey, Henry	3, Prince's Street, Westminster.
16	Denny, T. G.	2, Moor View, Hyde Park.
19	*Eddison, Frederic	
20	Eddison, Robert William	The Willows, Adel.
21	Firth, William	Burley Wood House.
48	Fraser, Henry John	Fairlea, Wood Lane, Headingley.
69	Fraser, James B.	44, Park Square.
24	Gascoigne, F. C. Trench	Parlington Park, nr. Garforth.
25	Green, Prof. A. H., F.R.S.	14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A.	30, Hyde Terrace.
27	Hargrave, John	St. Ann's Lodge, Burley, nr. Leeds.
28	Hepper, John	Clareville, Headingley.

80	Holmes, Joseph .	Chemical Works, Crown Street.
81	Holroyd, James .	Holly Bank, Shaw Lane.
30	Holt, H. S. .	Woodville, Roundhay.
31	Illingworth, William .	Flower Bank, Burley.
33	Irwell, Arthur F. .	Highfield House, Headingley.
32	*Irwin, Edwin .	
34	Jackson, W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	39, Leopold Street, New Leeds.
63	Jowitt, Miss E. M. .	Woodfield, Newton Hill.
37	*Kemplay, Miss .	
86	*Lambert, Joseph .	
38	Lawson, Thomas .	Newton Hill, Potternewton.
39	*Lawson, John .	
88	Legard, Albert G., M.A..	Whitkirk Grange.
23	Lupton, Prof. Arnold .	4, Albion Place.
44	McCheane, Miss .	The Hollies, Headingley.
43	Manning, H. J. .	
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch .	Park Row.
9	Mathers, John Shackleton	Hanover House, Leeds.
46	Middleton, John William	Otley Road, Headingley.
47	Morley, Herbert Ogle .	
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Brook House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	Nunneley, Thomas .	9, Beech Grove Terrace.
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D.	16, Park Place.

60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Leeds.
22	Reynolds, Richard F.	Wharfe Cottage, Shaw Lane.
62	Riley, H. W.	King Street.
73	Rowley, Walter, C.E.	Alder Hill, Meanwood.
65	Rücker, Prof. A. W., M.A., F.R.S.	Errington, Clapham Park, London, S.W.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
76	Smithells, Prof. A., B.Sc.	The Yorkshire College.
71	Stables, James	Lane Ends, Horsforth.
36	Tennant, John	18, Albion Street.
18	*Thornton Charles	
77	Titley, Mrs. Anthony	Manor House, Victoria Grove.
78	Titley, T. A.	Oakley House, Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.
82	Walker, H. B.	Heath Cottage, Moortown.
83	Ward, Edmund	Denison Hall, Hanover Square.
57	Ward, George, F.C.S.	Buckingham Ter., Headingley.
90	Ward, William	32, Hyde Terrace.
84	*Whiteley, James T.	
85	Willson, J. J.	2, Moorland Terrace.
42	Wilson, Mrs. Richard	Brown's Bank, Commercial St.
87	*Young, John	

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	Woodhouse Lane.
Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Appleyard, T. W., Jun.	Oak Lea, Cardigan Road.
Armistead, Edwin	39, Louis Street.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	5, Woodhouse Square.

Atkinson, Samuel	Moor-Allerton Lodge.
Bagshawe, Washington	31, Virginia Road.
Barber, Miss	34, Westbourne Terrace.
Barr, Prof. A., B.Sc., C.E.	Ashwood Villas, Headingley.
Barran, Alfred	Clarendon Road.
Barran, Charles	3, Mount Ter., Chapel-Allerton.
Barran, Rowland Hirst	Shaw Lane, Headingley.
Bartholomew, W. H., C.E.	Ridge Way House.
Bentfield, Charles	Shaw Lane, Headingley.
Berridge, H. D., M.A.	The Grammar School, Leeds.
Birchall, Oswald	Moor Bank, Ilkley.
Bothamley, C. H., F.C.S.	The Yorkshire College.
Bottomley, Herbert	Wooleigh Hall, Rawdon.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	14, Commercial Street.
Brigg, E. Newsom	Carlton Hill.
Brigg, Matthew A.	12, Sholebroke Avenue, Leeds.
Brigg, Thomas S.	Cromer Terrace.
Brigg, Mrs. William	Hollin Lane, Far Headingley.
Brocklehurst, T. P.	High School, Roundhay.
Brown, A. Kemp, B.A.	11, Richmond Road, Headingley.
Bruce, William	Snow Farm, Weetwood.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Woodbourne, Roundhay Park.
Bulmer, Charles	Blenheim Lodge.
Butler, Edmund	Kirkstall Forge.
Campbell, Archibald	23, Hyde Terrace.
Chadwick, Charles M., M.A., M.B.	3, Park Square.
Chorley, R.	Basinghall Street.
Clare, W., LL.D., L.R.C.P.	Park Square.
Clark, Miss	Potternewton.
Clarke, Charles Henry	Newton House, Spencer Place.
Clemons, G. H.	Burton Crescent, Far Headingley.

Conder, Rev. E. R., D.D.	1, Newton Grove, New Leeds.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	Vernon House, Roundhay.
Crawford, James	Chapel-Allerton.
Croysdale, John	Monk Bridge Road, Headingley.
Dalton, George	The Yews, North Hill Road.
Dawson, T.	Caledonian Road.
Denny, Frederick William	Victoria Road, Headingley.
Dibb, John Hustwick	Willow Grove Hall.
Dobson, Dr. Joseph	27, Burley Lawn.
Drake, Dr. F. H.	Otley Road, Headingley.
Eddison, J. C.	Britannia Street.
Eddison, Octavius, B.A.	70, Albion Street.
Ellison, James Edward	10, De Grey Road.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Firth, William, Junr.	Headingley House.
Fisher, J. Greevz	1, St. Columba Street.
Flockton, William	Hopewell House, Oulton.
Flood, F. P.	2, Lodge Street.
Foster, George	Osmondthorpe.
Garlick, Miss	Hyde Terrace.
Goodson, Mrs.	Bedford House, Roundhay.
Green, Mrs. Thomas	Asket Hill, Roundhay.
Hall, Frederick, M.D.	St. Mark's Villas.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Hardcastle, C. D.	Calverley Chambers.
Harding, T. W.	St. Ives, Headingley.
Harland, J. Walter	Headingley.
Hartley, R. N., M.B.	29, Blenheim Terrace.

Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hellier, J. B., M.D.	De Grey Terrace.
Hepworth, S. C.	Dewsbury.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Ingham, William	Aspen Ing, Wortley.
Jackson, J.	Airedale Cliff, Newlay.
Jackson, Richard	Commercial Street.
Jefferson, J. S.	15, York Place.
Jessop, G. W.	Woodcliffe, Rawdon.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, F. W.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Joy, W. Lomas	Headingley.
Kettlewell, C. B.	38, Commercial Street.
Knight, Miss R.	Far Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lewkowitsch, J., Ph.D.	6, Warwick Place.
Little, F. Buller	Woodlands, Chapel-Allerton.
Marcan, Lucien	2, St. Chad's Villas.
Matterson, Miss	Cavendish House, Cavendish Rd.
Megson, Albert	Spencer Place, New Leeds.
Megson, J. C.	Do. do.
Moore, Edwin	50, Cowper Street, New Leeds.
Moorhouse, Samuel	Sholebroke Avenue.

	8, Blenheim Terrace.
	31, Commercial Street.
	12, Blenheim Terrace.
	De Grey Terrace.
	Dewsbury.
	9, Hanover Square.
	23, Park Row.
	29, Cookridge Street.
	Adel.
G.S.	3, Atkinson Street, Hunslet.
	Aspen Ing, Wortley.
	Airedale Cliff, Newlay.
	Commercial Street.
	15, York Place.
C.S.	Woodcliffe, Rawdon.
	32, Park Square.
	2, Beech Grove Terrace.
	2, Moorland Road.
	25, Hyde Terrace.
	5, Beech Grove Terrace.
	Headingley.
	38, Commercial Street.
D.	Far Headingley.
T,	Leopold Street, New Leeds.
J., Ph.D.	Hope Foundry, Mabgate.
or	6, Warwick Place.
on	Woodlands, Chapel-Allerton.
ss	2, St. Chad's Villas.
ert	Cavendish House, Cavendish Road.
	Spencer Place, New Leeds.
n	Do. do.
Samuel	50, Cooper Street, New Leeds.
	Sholebroke House.

Morrison, Sir G. W.	Town Hall, Leeds.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Cardigan Road.
Nield, Wm.	Old Manor House, Headingley.
Oates, C. G.	Meanwoodside.
Passavant, Miss Laura M.	29, Virginia Road.
Pawson, John Edward	Lawns House, Farnley, nr. Leeds.
Payne, E. S.	6, Crimbles Street, Camp Road.
Peate, Jonathan	Guiseley.
Pepper, J. E.	7, Cromer Terrace.
Pickles, J. J.	66, Camp Road.
Powell, William	4, Queen Square.
Ransome, Prof. Cyril, M.A.	4, De Grey Road.
Rhodes, John H.	27, Park Square.
Richardson, W. W.	Cliff Road, Hyde Park.
Rider, James	Pease's Buildings, South Parade.
Roberts, Mrs.	Holly Bank, Headingley.
Robinson, Edmund	42, Park Square.
Robson, A. W. Mayo, F.R.C.S.	Hillary Place.
Roebuck, W. Denison, F.L.S.	Sunny Bank.
Rooke, Charles S.	Newton Hill, Potternewton.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	2, Virginia Terrace.
Scatcherd, Oliver	Morley, near Leeds.
Shackleton, Joseph	West House, New Wortley.
Shackleton, Thomas	1, Headingley Terrace.
Simms, T.	7, Commercial Buildings.
Simpson, Miss	Belle Vue Villa, Chapeltown Rd.
Slade, Robert	14, Springfield Mount.
Smeeton, Wm.	15, Reginald Terrace.

Smeeton, Miss E. E.	West Hill.
Smith, Rodger	Sun Foundry, Dewsbury Road.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Spark, F. R.	29, Hyde Terrace.
Stead, C. F.	The Knoll, Baildon.
Stockdale, T.	Spring Lea.
Stroud, Prof. William, D.Sc., B.A.	Ashwood Villas, Headingley.
Stubbins, John, F.G.S., F.R.M.S.	Inglebank, Far Headingley.
Sutcliffe, Francis	Torquay Terrace, Shaw Lane.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Vincent T.	195, Belle Vue Road.
Thompson, Miss	St. Mark's Villas.
Thorp, W. H.	9, Burton Crescent, Shaw Lane.
Tiffany, George John	17, Grove Terrace.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Turner, Joseph	Spencer Place, New Leeds.
Wade, James	3, Blenheim Square.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, James	Newton Park.
Walker, George	Do.
Walker William	Osmondthorpe Hall.
Ward, Richard	Keldholme, Moor-Allerton.
Watson Charles	Burton Grange, Far Headingley.
Wauby, William	Clifton House, Newton Hill.
Webb, Robert, M.A.	The Grammar School, Leeds.
Whitehead, Alfred	1, Vernon Road.
Whitehead, John	Newstead House, Spencer Place.
Wigfall, F. H.	Cumberland Road.
Willans, J. W.	The Woodlands, Kirkstall.
Wood, John	11, St. Mark's Terrace.
Woodhouse, Edwin	The Grange, Armley.
Wray, Robert	40, Brunswick Street.

Foundry, Dewsbury Road.

Ivy Lodge, Hunslet Road.

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Wright, Charles James	Lynton Villa, Virginia Road.
Wright, Miss L.	4, Virginia Terrace.
Yewdall, Edwin	56, Wade Lane.
Zossenheim, M.	Rose Mount, North Hill Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Abbott, Mrs. J.	Woodhouse Lane.
Albrecht, Mrs. M.	Bleak House, Headingley.
Atkinson, Miss C.	Moor-Allerton Lodge.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Atkinson, Miss Eleanor S.	Clarendon Road.
Barber, Miss B.	34, Westbourne Terrace.
Barr, Mrs. A.	Ashwood Villas, Headingley.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Mrs. Charles	3, Mount Ter., Chapel-Allerton.
Bartholomew, Miss Mary	Ridge Way House.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Birchall, Mrs. Oswald	Moor Bank, Ilkley.
Boulton, Miss M.	Prof. Ransome, De Grey Road.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	14, Commercial Street.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S.	Cromer Terrace.
Brigg, Miss	Hollin Lane, Far Headingley.
Bruce, Mrs. W.	Snow Farm, Weetwood.
Buckton, Mrs. R.	Woodbourne, Roundhay Park.
Bulmer, Mrs. Charles	Blenheim Lodge.
Bulmer, Miss Ada	Do.
Butler, Mrs. Edmund	Kirkstall Forge.

Campbell, Mrs. A.	23, Hyde Terrace.
Clemons, Mrs. G. H.	Burton Crescent.
Connon, Mrs. J. W.	Park Row.
Cooke, Mrs. W.	Moorfield House, Moor-Allerton.
Crampton, Miss	Vernon House, Roundhay.
Crampton, Miss Louisa	Do. do.
Crawford, Mrs. James	Chapel-Allerton.
Crawford, Mrs. J. W.	Newton Lane.
Croysdale, Mrs. J.	Monk Bridge Road, Headingley.
Dalton, Mrs. G.	The Yews, North Hill Road.
Denny, Miss	Winstanley Terrace.
Dobson, Mrs.	27, Burley Lawn.
Fairley, Mrs. T.	8, Newton Grove.
Filliter, Miss	West Mount, Clarendon Road.
Garlick, Miss E.	Hyde Terrace.
Goodall, Miss M.	Mr. Saville, 2, Virginia Terrace.
Goodson, Miss	Bedford House, Roundhay.
Goodson, Miss L.	Do. do.
Green, Miss Penrose	Asket Hill, Roundhay.
Haley, Miss	Mr. Denny, 2, Moor View.
Hall, Mrs. F.	St. Mark's Villas.
Hall, Mrs. W.	Headingley.
Hallilay, Mrs.	28, Burley Road.
Hallilay, Richard Percy	Do.
Hannan, Mrs. W. S.	4, East Parade.
Harland, Mrs. J. W.	Headingley.
Hartnell, Mrs. Wilson	8, Blenheim Terrace.
Hassé, Mrs.	31, Commercial Street.
Hebblethwaite, Miss S.	12, Blenheim Terrace.
Hepper, Miss	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.

Holgate, Mrs. B.	3, Atkinson Street, Hunslet.
Holroyd, Mrs.	Holly Bank, Shaw Lane.
Holroyd, Miss	Do. do.
Holroyd, Miss Jane	Do. do.
Jackson, Miss	Buslingthorpe, Leeds.
Jefferson, Miss M.	15, York Place.
Jessop, Mrs. T. R.	32, Park Square.
Johnston, Miss M. N.	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Joy, Mrs. W. Lomas	Headingley.
Joy, Miss	Do.
Kettlewell, Miss E.	38, Commercial Street.
Kettlewell, Miss F. A.	Do.
Knight, Miss S. E.	Far Headingley.
Lawson, Miss	Bramhope.
Little, Mrs. F. Buller	Woodlands, Chapel-Allerton.
Little, Miss Edith	Do. do.
Malcolm, Mrs. J. C.	Brighton Villa, New Leeds.
Marcan, Mrs. Lucien	2, St. Chad's Villas.
Moorhouse, Mrs. S.	Sholebroke Avenue.
Morrison, Lady	Town Hall, Leeds.
Myers, Miss	Cavendish House.
Myers, Miss	Grove House, Roundhay.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss C. E.	St. John's Cottage, St. John's Rd.
Nelson, Miss Louisa	Do. do.
Nelson, P.	Do. do.
Nelson, R. H.	Do. do.
Newstead, Mrs. J. S.	Woodville, Horsforth.
Nicholson, Mrs. J. C.	Cardigan Road.
Nield, Mrs.	Old Manor House, Headingley.

Nield, Miss E.	Old Manor House, Headingley.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do.
Passavant, Miss A.	29, Virginia Road.
Passavant, Miss F. J.	Do.
Payne, Miss	6, Crimbles Street, Camp Road.
Pepper, Mrs. J. E.	7, Cromer Terrace.
Pickles, Mrs. J. J.	66, Camp Road.
Price, Miss	Mount Pleasant.
Ramsbotham, Miss	16, Park Place.
Ransome, Mrs. C.	4, De Grey Road.
Redmayne, Mrs. John	39, Sholebroke Avenue.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Rhodes, Miss	27, Park Square.
Richardson, Mrs.	Cliff Road.
Richardson, Miss Lilly	Do.
Roberts, Miss	Holly Bank, Headingley.
Robson, Mrs. Mayo	Hillary Place.
Rooke, Miss	Newton Hill, Potternewton.
Ryder, Miss A. E.	Westfield, Chapeltown.
Ryder, Miss E. I.	Do.
Ryder, Miss Louisa	Do.
Ryder, Miss Mary	Do.
Ryder, F. J.	Do.
Sanders, Mrs. J. A.	5, Blenheim Square.
Saville, Miss S. E.	2, Virginia Terrace.
Scatcherd, Mrs. O.	Morley.
Shackleton, Miss	1, Headingley Terrace.
Simms, Mrs.	7, Commercial Buildings.
Simpson, Mrs.	Belle Vue Villa, Chapeltown Rd.
Simpson, Miss H.	Do. do.
Slade, Mrs. R.	14, Springfield Mount.
Smeeton, Mrs. W.	15, Reginald Terrace.

Smeeton, Miss Alice	15, Reginald Terrace.
Smith, Miss Farrar	Hope Villa, Woodhouse Lane.
Spark, Mrs. F. R.	29, Hyde Terrace.
Spark, Miss	Do.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Ashwood Villas.
Sutcliffe, Miss	Torquay Terrace.
Sutcliffe, Miss K.	Do.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Tatham, Miss G.	Springfield Mount.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley.
Thompson, Mrs. V. T.	195, Belle Vue Road.
Thompson, Miss E.	St. Mark's Villas.
Thorp, Mrs. W. H.	9, Burton Crescent, Shaw Lane.
Turner, Mrs. J.	Spencer Place, New Leeds.
Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Walker, Mrs. William	Osmondthorpe Hall.
Walker, Miss	Do.
Walker, Miss Edith M.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Ward, Mrs. Richard	Keldholme, Moor-Allerton.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Whitehead, Mrs. Alfred	1, Vernon Road.

Whitehead, Miss Amy	.	1, Vernon Road.
Whitehead, Arthur	.	Do.
Whitehead, Mrs. J.	.	Newstead House, Spencer Place.
Wigfall, Mrs.	.	Cumberland House.
Willans, Mrs.	.	The Woodlands, Kirkstall.
Willson, Miss Emilie Dorothy	.	2, Moorland Terrace.
Willson, Miss Margaret	.	Do.
Wood, Miss	.	11, St. Mark's Terrace.
Woodhouse, Mrs. E.	.	The Grange, Armley.
Woodhouse, Miss	.	Do. do.
Yewdall, Mrs.	.	56, Wade Lane.
Zossenheim, Mrs. M.	.	Rose Mount, North Hill Lane.
Zossenheim, Miss B.	.	Do. do.
Zossenheim, A	.	Do. do.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

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The Most Rev. the Lord Archbishop of York, Bishopthorpe.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

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THE

SIXTY-EIGHTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY SOCIETY,

AT THE CLOSE OF THE SESSION, 1887-8.

READ AT THE ANNUAL MEETING, MAY 1st, 1888.

Leeds:
PRINTED BY MCCORQUODALE & CO. LIMITED.
MDCCCLXXXVIII.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SIXTY-EIGHTH SESSION.

THE following table shows the present numbers of Members and Subscribers, with those of the previous year:—

	1887.	1888.
Original Proprietary Members (78 shares) ...	71	70
New Proprietary Members (121 shares) ...	98	97
Ordinary Members	4	4
New Ordinary Members...	83	84
Annual Subscribers of £1 1s.	179	175
Annual Subscribers of 7s. 6d.	176	174
Total	611	604

The numerical strength of the Society is therefore practically unaltered. The Council would have been glad if the interesting character of the Lecture Card and the reversion to half-past seven as the hour of meeting had resulted in an accession of numbers.

At the general meetings, which were well attended, the following Lectures and Papers were given:—

1. "The National Art." Sir J. D. Linton, President of the Royal Institute of Painters in Water-Colours. *Read Oct. 18th*, 1887.
2. "What I saw in Australia." Geo. Augustus Sala. *Read Nov. 1st*, 1887.
3. "Aims and Methods of Psychical Research." Frederic W. H. Myers, M.A. *Read Nov. 15th*, 1887.
4. "Canaanite Races." Capt. C. R. Conder, R.E. *Read Dec. 13th*, 1887.

5. "The Principle of 'State Interference.'" Rev. F. J. Jayne, M.A. *Read Jan. 10th*, 1888.
6. "Some Hardships in the Life of Plants." Francis Darwin, M.A., F.R.S. *Read Jan. 17th*, 1888.
7. "The Measurement of Colour." Capt. W. de W. Abney, R.E., F.R.S. *Read Feb. 7th*, 1888.
8. Discussion Evening. Subject: "The Artificial Formation of Organic Substances," introduced by three short papers, viz.: (1) "General Considerations"—Sydney Lupton, M.A.; (2) "Technical Applications"—Prof. J. J. Hummel, F.C.S.; (3) "Future Possibilities"—Prof. A. Smithells, B.Sc. *Read Feb. 21st*, 1888.
9. "Charles Lamb." Sir George Morrison. *Read March 6th*, 1888.
10. "The Nature of Flame." Prof. H. B. Dixon, M.A., F.R.S. *Read March 20th*, 1888.
11. "Masterpieces of Japanese Art." Ernest Hart, Editor of the "British Medical Journal." *Read April 10th*, 1888.
12. "Contrasts in Nature: the infinitely great and the infinitely little." Rev. W. H. Dallinger, D.D., F.R.S. *Read April 17th*, 1888.

The evening devoted to discussion on "The Artificial Formation of Organic Substances" represented an experiment. The attendance was excellent, and there was a general feeling that the three Members who had undertaken this work, had treated the subject with conspicuous ability and harmony of plan. Their success may have even contributed to check general discussion, which did not result. The plan is certainly deserving of a further trial.

The special thanks of the Society were tendered to those gentlemen who so generously gave their lectures without fee, viz.—Sir J. D. Linton, the Rev. Canon Jayne, Mr. Sydney Lupton, Prof. Hummel, Prof. Smithells, and Sir George Morrison.

The chief attractions at the Conversazione, which was held on the 6th December, 1887, were a valuable collection of water-colours, for which the Council were chiefly indebted to the zealous labours of their colleague, Mr. J. J. Willson, and an exhibition of work executed in evening classes held in connection with the Home Arts and Industries Association. Some good examples of home work were shown in Modelling in Clay, Wood Carving, Repoussé work in Brass and Copper, and Embossed Leather. By means of a special fund raised by private subscription, the Committee were enabled to offer two prizes for the best work in each of the four classes named, and in this way £15 15s. was distributed among the competitors. A considerable number of the exhibits were sold on the evening of the Conversazione and on the three following days during which the exhibition was open, and orders were given for other work to be executed by the exhibitors. In addition to the classes of home work named, there was an interesting exhibition of Embroidery, Lace and Needlework, and of Home-spun and Woven Linen.

The Conversazione was followed on the 7th December by a Conference on "Home Arts as a Branch of Technical Education," which was arranged by this Society in conjunction with the Leeds Branch of the National Association for the Promotion of Technical Education. Mr. C. E. Bousfield, chairman of the Leeds Branch, presided, and papers were read by Mr. Alfred Harris, on "Technical Night Schools in Germany," and Mrs. Ernest Hart, on "Village Technical Teaching in Donegal."

The Society is indebted to the following gentlemen for undertaking the third series of Museum Lectures delivered to the public on Saturday afternoons.

Nov. 12th, 1887.	SYDNEY LUPTON, M.A.	"Indigo."
Nov. 19th, 1887.	PROF. RANSOME, M.A.	"The Battle of Leeds."
Nov. 26th, 1887.	W. E. CLARKE ...	"Duck Decoys."
Dec. 10th, 1887.	ALFRED DENNY ...	"Spiders and their ways."
Feb. 4th, 1888.	H. L. ROTH	"Some West Indian Savages."
Feb. 11th, 1888.	PROF. MIALL... ...	"A Stick of Red Sealing Wax."
Feb. 18th, 1888.	G. H. L. RICKARDS ...	"Bees."
Feb. 25th, 1888.	DR. EDDISON ...	"Savage Art."

It will be seen that the subjects chosen for these lectures have usually related to Natural History or matters of local interest, though the principle of selection has not been scrupulously adhered to. In four instances illustrations for the lecture have been furnished by the Society's Museum. By simplicity of treatment, and especially by unusual brevity, the lecturers having in most cases kept well within the hour, a popular style of address has been maintained. The attendance has fully equalled the expectation of the promoters of these lectures.

The cleaning and re-arrangement of the collections have been prosecuted continuously throughout the year. In the last Report the re-mounting of the fossils was mentioned as work in progress. This has now been completed. The collections of Mollusca have been cleaned and re-arranged, and the remaining Invertebrata are in hand. It is intended to simplify the various collections of Insects exposed to

public view, and to unite for this purpose the separate collections, illustrative of Insect-types, Transformations, Insect-constructions, Galls, etc., which have been established at different times.

In the department of Meteorology, the observations on Sunshine, by means of Jordan's Photographic Sunshine Recorder, have been continued at the three stations named last year, as well as at a new station at the Union Infirmary, Burmantofts. The comparative results are of considerable interest, and are detailed in the usual Annual Table of Meteorology appended to the Report.

The number of visitors to the Museum shows a slight increase over last year, being 24,209.

The Council regret to report that they have been unable to discharge any part of the debt incurred last year by the installation of the electric light, but that, on the contrary, the revenue has this year been less than the ordinary expenditure. The amount due to the Treasurer now stands at £469. The Council feel that it will be the duty of those who may be charged with the future management of the Society to lessen expenditure in every way that may be consistent with efficiency, and also to consider any means of temporarily increasing its income.

The Council record with a mixed feeling the recent appointment of their colleague, Prof. A. H. Green, M.A., F.R.S., to the chair of Geology in the University of Oxford. They congratulate Prof. Green upon the distinguished

honour conveyed by this selection, but regret the loss which must occur to our Society of the services of so able an Honorary Curator in Geology.

On the day of the Annual Meeting, Mr. W. E. Clarke, Assistant Curator since 1884, received notice of his appointment to the important post of Senior Assistant in the Natural History Department in the Museum of Science and Art, Edinburgh. There has been no opportunity of obtaining any expression of the sentiments of the Council, but the officers of the Society take this occasion of recognising the very valuable service which Mr. Clarke has rendered to the Society's collections, and especially to the collections of birds in which his thorough knowledge and practical skill have been conspicuously shown.

The Society's Hall-keeper, Thomas Pollard, having resigned that post after holding it for eighteen years, the Council handed him a resolution expressing their good wishes and appreciation of his faithful services. This was accompanied by a purse containing about £8, contributed by the Council and a few other Members of the Society.

The obituary of the year includes the name of a townsman long held in universal esteem, Mr. Samuel Hey, F.R.C.S., J.P. Mr. Hey was born in Derbyshire, and was a grandson of the late William Hey, F.R.S., the eminent surgeon, and friend of Priestley. Mr. Samuel Hey also entered the medical profession, receiving his medical education at University College, and in Paris. In 1844 he entered upon medical practice in Leeds, in conjunction with

his uncle and cousin. He was appointed honorary surgeon to the Infirmary in 1851, and consulting surgeon in 1872. Mr. Hey was long associated with the Leeds School of Medicine, lecturing on Physiology, and subsequently on Surgery, and he filled the office of President in the year 1865, when the new buildings in Park Street were opened. Mr. Hey was a member of Council of the Philosophical and Literary Society from 1857 to 1870. In the year 1880 he retired from the active duties of professional life. Mr. Hey died at the age of 73.

From the Honorary Members of the Society, one name has been removed by death—Spencer Fullerton Baird, LL.D., who had filled the influential post of Secretary to the Smithsonian Institution at Washington, U.S.A., since 1878. Dr. Baird was the author of many papers and reports on Zoology, and especially of important works on the birds of America.

The liberality of the Smithsonian Institute in the distribution amongst the libraries of English scientific societies of copies of the valuable publications which it issues, places such societies under a great obligation to the Institute.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1887.

1887.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	37·1	29·788	1·58	1·95
February	40·1	30·101	·82	·84
March	38·9	29·883	·90	·42
April	43·7	29·834	·70	·55
May	48·1	29·837	2·01	2·12
June	61·2	29·995	·06	·06
July...	64·9	29·830	1·10	1·72
August	62·5	29·761	1·56	1·25
September	52·3	29·843	2·41	3·11
October	45·3	29·921	1·89	2·08
November	40·7	29·525	1·92	2·08
December	38·1	29·618	1·59	1·61

The mean monthly temperature was 47·7.

The mean monthly height of the barometer was 29·745 inches.

The total rainfall for the year was—Museum 16·54 inches and Woodhouse Cliff 18·79 inches. The rainfall for the past year is the lowest registered at the Museum since 1865, in which year 15·21 inches were recorded. The average rainfall at the Museum for the ten years 1877-1886 is 28·74 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 85° on July 3rd; and the minimum 21° on January 17th.

The greatest barometric pressure was on February 8th, being 30·660 inches, the temperature of the mercury being 49°; the least pressure was on November 3rd, being 28·560, the temperature of the mercury being 52°.

The greatest fall of rain (during 24 hours) was on October 9th, being ·63 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

SUNSHINE AT LEEDS IN 1887.

The observations were made by Jordan's Photographic Sunshine Recorder, at the following stations:—

1. The Museum, situate in the centre of the town; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1¼ miles N.W. from the centre of the town; elevation, 330 feet; residential suburb. Mr. Richard Reynolds.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the town; elevation, 475 feet; on the fringe of the borough. Mr. C. S. Irvine.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the town; elevation, 200 feet; industrial district. Dr. Allan and Mr. W. J. Staddon.

Months.	Stations.	Hours of sunshine registered at each station for each month.	Percentage of possible sunshine registered at each station for each month.
JANUARY	1	17·0	6·6
	2	30·6	11·7
	3	35·5	13·7
FEBRUARY	1	65·9	23·4
	2	69·2	24·8
	3	96·0	34·5
MARCH..	1	107·9	29·6
	2	135·5	36·9
	3	116·8	31·8
APRIL	1	149·5	36·0
	2	161·8	38·9
	3	132·3	31·8
MAY	1	90·1	18·7
	2	95·5	19·8
	3	101·7	21·1
JUNE	1	174·5	35·2
	2	186·5	37·7
	3	200·0	40·4
JULY	1	179·6	36·1
	2	200·5	40·3
	3	207·7	41·8
AUGUST	1	162·8	36·5
	2	186·9	41·4
	3	171·5	38·2
	4	170·2	37·9
SEPTEMBER	1	78·0	20·7
	2	93·2	24·9
	3	82·5	21·8
	4	81·5	21·3
OCTOBER	1	71·3	21·6
	2	100·3	30·7
	3	101·8	30·9
	4	85·5	26·0
NOVEMBER	1	8·3	3·1
	2	33·2	12·5
	3	34·5	13·0
	4	14·0	5·3
DECEMBER	1	3·4	1·4
	2	30·5	12·5
	3	35·5	14·6
	4	19·3	7·9

SUMMARY FOR THE YEAR.

Museum	24·8	per cent. of possible sunshine recorded.
Woodhouse Cliff ..	29·7	" " " "
Lawnswood	29·5	" " " "
	28	per cent. mean average for Leeds for 1887.

The Meteorological Office publishes the following records of sunshine in 1887, as observed at stations taken as representing specified districts:—

		Percentage of possible duration.
Scotland,	N. (Stornoway)	22
"	E. (Aberdeen, Braemar, Marchmont)	31
"	W. (Glasgow, Douglas, Isle of Man)	34
England,	N.E. (Durham, York)	31
"	N.W. (Penrith, Stonyhurst, Blackpool, Llandudno)	35
"	Mid. (Bawtry, Leicester, Oxford, &c.)	35
"	S. (London, Hastings, Southampton, &c.)	38
"	E. (Hillington, Geldestone, Ingatestone)	39
"	S.W. (Pembroke, Falmouth, Plymouth, &c.)	44
Ireland,	N. (Armagh, Markree Castle)	31
"	S. (Dublin, Parsonstown, Valencia)	39
Channel Islands (Jersey)	.. ..	48

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the Year 1887-8.

RECEIPTS.

	£	s.	d.	£	s.	d.
To Balance in hand, May 2nd, 1887		—		0	11	8
,, Annual Subscriptions, viz.:—						
85 New Proprietary Members, at 21s. ...	89	5	0			
4 Original Ordinary do. 42s. ...	8	8	0			
69 New Ordinary do. 21s. ...	72	9	0			
158 Annual Subscribers, at 21s. ...	165	18	0			
17 New Annual Subscribers, at 21s. ...	17	17	0			
155 Annual Subscribers, at 7s. 6d. ...	58	2	6			
17 New do. at 7s. 6d. ...	6	7	6			
,, Arrears	3	10	6			
				421	17	6
,, Rent, viz.:—						
Cellars	40	0	0			
Lecture Room	186	19	4			
				226	19	4
,, Receipts from Visitors to Museum	100	17	5			
,, Do. do. Conversazione ...	28	15	10			
				129	13	3
,, Sale of Catalogues	0	12	9			
,, Sundries	0	18	0			
				1	10	9
,, Sale of Forfeited Shares				6	0	0
,, Balance Due to Bank...				468	18	11
				£1,255	11	5

PAYMENTS.

	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 2nd, 1887 ...		—		360	19	6
,, Repairs and Alterations	24	1	5			
,, Rates and Taxes	4	12	0			
,, Fire Insurance...	13	15	0			
,, Coals, &c.	21	18	7			
,, Gas	21	8	7			
,, Cleaning	8	18	0			
				94	13	7
,, Salaries...	404	0	0			
,, Fee to Auditor...	2	2	0			
				406	2	0
,, Collections, viz.:—						
Geological	23	18	5			
Zoological	19	12	3			
Library	30	3	7			
				73	14	3
,, Postages	6	14	5			
,, Advertising and Printing	40	2	2			
,, Lectures	107	4	5			
,, Conversazione Expenses	106	19	5			
,, Interest and Bank Commission	15	8	0			
,, Sundries	19	18	11			
				296	7	4
,, Furniture	6	13	6			
,, Scientific Apparatus	3	6	2			
,, Electric Lighting	13	6	11			
				23	6	7
,, Balance in Hand				0	8	2
				£1,255	11	5

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 12th, 1888.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1887-8.

ZOOLOGY.

Several Nests of British Birds.....	Mr. W. C. Scott, Leeds.
Mounted specimens of Foraminifera	Mr. J. W. Dixon, Leeds.
Egg of Bulimus.....	Rev. H. Milnes, Winster.
Nest of Hornet, with specimens of the insect	Mr. J. Leech, New York, U.S.A.
Emeu, Opossum, Mandrill, and Lion Cub	Mr. Edmonds, Wombwell's Menagerie.
Snout of Sawfish	Mr. R. B. Turner, J.P.
Sparrowhawk	Mrs. Pepper, Leeds.

PALÆONTOLOGY.

Bones of Mammoth, found at Brough	Dr. Mossman, Elloughton.
Ziphioid skull, from the Red Crag ...	Mr. S. A. Adamson, Leeds.
Fossil Teeth of Shark	Miss Crowder, Leeds.

ARCHÆOLOGY.

Ancient Coins from Egypt	Mr. F. Pullan, Leeds.
Bronze Roman Lamp found at Pontefract	Purchased.
Old Spectacles, Shears, and Dagger	Mrs. Spence, Leeds.

PUBLICATIONS.

Catalogue of Lizards in the British Museum, Vol. III., by G. A. Boulenger	British Museum.
Catalogue of Fossil Mammalia in the British Museum, Parts IV. and V., by R. Lydekker.....	
Catalogue of Birds in the British Museum, Vol. XII., by R. B. Sharpe	
Guide to the Galleries of Reptiles and Fishes in the British Museum	
Guide to the Galleries of Mollusca and Echinodermata in the British Museum	
General Guide to the British Museum (Natural History)	

Ralph Thoresby: His Town and Times, Vol. II.	Purchased.
The Morse Collection of Japanese Pottery	Essex Institute, U.S.A.
Numerical Lunar Theory, by Sir G. B. Airey, K.C.B.	The Lords of the Treasury.
Contributions to the History of the Mineral Waters of Yorkshire	The Yorkshire College.
Prodromus of the Zoology of Victoria, by Frederick McCoy, F.R.S., &c. Decades 1-15	Victorian Government.
The Microscopical Structure of Iron and Steel, by H. C. Sorby, LL.D., F.R.S., &c.	The Author.
Greenwich Observations, 1885	The Astronomer-Royal.
Philip's Manual of Geology, by R. Etheridge, F.R.S.	Purchased.
Set of the Zoological Record, complete to date.....	Deposited by the Yorkshire Naturalists' Union.
Fourth Report of the Bureau of Ethnology	Smithsonian Institution.
The Great Trigonometrical Survey of India, Vol. IVA.	Secretary of State in Council of India.
Annual Report of the Sheffield Philosophical and Literary Society	The Society.
Transactions of the Astronomical Observatory of Yale University ...	The University.
Proceedings of the Royal Institution of Great Britain, Vol. XI., Part III.	Royal Institution.
Annual Reports of the Trustees of the Cooper Union for the Advancement of Science.....	The Union.
Symons's British Rainfall, 1886	Purchased.
Transactions of the Wagner Free Institute of Science, Philadelphia...	The Institute.
Memoirs of the National Academy of Sciences, Vol. III., Part II.	The Academy.

Report of the Committee on the Transit of Venus, 1882	The Lords of the Treasury.
Report of the Meteorological Service of the Dominion of Canada for 1884	The Dominion Government.
Sixth Annual Report of the United States Geological Survey, 1884-85, by J. W. Powell	Department of the Interior, U. S. A.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical & Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.

Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenchaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.
Proceedings of the Zoological Society	Zoological Society.

ANNUALLY.

Philosophical Transactions	Purchased.
Annual Report of the Yorkshire Philosophical Society, 1887.....	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society, 1886-7	Glasgow Philosophical Society.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 Parts a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the American Academy of Arts and Sciences.....	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society..... Proceedings do. (several Parts a year)	American Philosophical Society.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings and Transactions of the Royal Irish Academy	Royal Irish Academy.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society.....	Leicester Literary and Philosophical Society.
Report of the Middlesex Hospital ...	The Hospital.
Calendar and Annual Report of the Yorkshire College, Leeds	The College.
Transactions of the Yorkshire Naturalists' Union	

Proceedings of the Birmingham Philosophical Society	Birmingham Philosophical Society.
Proceedings of the Royal Society of Edinburgh	Royal Society of Edinburgh.
Transactions of do.	
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Monographs of the Palæontographical Society.....	Purchased.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Boston Society of Natural History, U.S.A.	Boston Society of Natural History.
Memoirs of do.	
Memoirs of the Royal Astronomical Society.....	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Reports and Papers of Meetings of the Architectural Societies of Lincoln and York.....	The Societies.
Scientific Proceedings of the Royal Dublin Society (several Parts).....	Royal Dublin Society.
Scientific Transactions do. (several Parts)	
Report of the Howard Association...	Howard Association.
Bulletin of the American Museum of Natural History.....	American Museum.
Annual Report, 1886-7	
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of Harvard College	The College.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.

Proceedings of the Royal Society ...	Royal Society.
Report of the Smithsonian Institution Smithsonian Miscellaneous Collections	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society..... Proceedings do.	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Papers and Proceedings of the Royal Society of Tasmania	Royal Society of Tasmania.
Proceedings and Transactions of the Royal Society of Canada.....	Royal Society of Canada.
Geological Survey of Canada: Report of Progress, 1886	Dominion Government of Canada.
Transactions of the Leeds Geological Association	The Association.
Proceedings of the Canadian Institute	The Institute.
Proceedings of the Liverpool Scientific Students' Association, 1886-7	The Association.
Proceedings of the Liverpool Literary and Philosophical Society.....	The Society.
Journal of the Royal Geological Society of Ireland.....	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1885-6	The Club.
Bollettino delle Publicationi Italiane Ricevute per Diritto di Stampa, 1887-8	
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien, 1887	The Society.
Catalogue of the Library of the Edinburgh Geological Society.....	The Society.
Annual Report of the Society for the Prevention of Cruelty to Animals	The Society.

Geological Survey of New South Wales, 1887	Colonial Government.
Geological Record for 1879	Purchased.
Annual Report, Middlesex Hospital, 1886	The Hospital.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, Vol. IX., Part I.	The Tyneside Naturalists' Field Club.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1886-7	The Club.
Victorian Year-Book, 1886-7. By Henry Heylyn Hayter, C.M.G.	The Author.

LIST OF OFFICERS AND COUNCIL,

1888-9.

OFFICERS.

PRESIDENT	THOMAS MARSHALL, M.A.
VICE-PRESIDENTS . .	EDWARD ATKINSON, F.L.S. W. NICHOLSON PRICE.
HONORARY SECRETARIES .	RICHARD REYNOLDS, F.I.C., F.C.S. SYDNEY LUPTON, M.A.
TREASURER	HENRY OXLEY.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.R.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.A., M.D., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	THOS. SCATTERGOOD.
NATHAN BODINGTON, M.A.	ARTHUR SMITHELLS, B.Sc.
A. G. LEGARD, M.A.	J. HARTLEY WICKSTEED.
Rev. J. H. D. MATTHEWS, M.A.	J. J. WILLSON
CHARLES PEBODY.	EDMUND WILSON.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary . . .	W. F. HUSBAND, LL.B.
Sub-Curator . . .	EDGAR R. WAITE.

LIST OF MEMBERS AND SUBSCRIBERS,

1888-9.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Farnley.
4	Arthington, Robert	Headingley.
1	Atkinson, John William	Ilkley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	Beckett, W., M.P. (2 shares)	Nun-Appleton, York.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	22, Sholebroke Avenue, Chapeltown Road.
11	*Brown, James	
31, 62	Brown, S. J. (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	1, High Street, Hull.
28	Empson, Christopher	Beechwood, Sowerby Bridge.

29, 48	Ford, J. R. (2 shares) .	Quarry Dene, Weetwood.
46	George, Thos. Willington	Gledhow Grove.
33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Very Rev. John, D.D. (2 shares) .	The Deanery, Worcester.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
44	Hirst, Joseph .	Wharfedale Lawn, Wetherby.
30	Horsfall, J., M.A., F.R.C.S.	Hillary House.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis M., M.A.	Wellington Street.
56	Lupton, Sydney, M.A. .	The Harehills, near Leeds.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	13, Belsize Avenue, London, N.W.
65	*Marshall, J. G. .	
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
63	Marshall, Stephen A., B.A.	Loughrigg Brow, Ambleside.
67	Marshall, V. A. E., B.A.	Monk Coniston, Ambleside.
43	Nelson, George Hird .	Moorland House, Headingley.
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.

69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	27, Hanover Square.
76	*Ward, William Sykes .	
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace, Virginia Rd.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	Starbeck, near Harrogate.
32	Atkinson, Edward, F.L.S.	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	3, Cavendish Road.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.
5, 6	Brown, G. W. (2 shares)	Heathfield, Ilkley.
89	Buckton, Joshua .	Meanwood.

8	Buckton, Walter .	27, Ladbroke Square, London, W.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
19	Fairbairn, Sir Andrew .	Askham Richard, near York.
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
118	Flitch, John R. .	Chapel-Allerton.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, Wm. Henry (P) (9 shares) .	Armley House.
22	Hargrave, Charles .	St. Agnesgate House, Ripon.
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William .	Spring Bank, Headingley.
81	Hatch, S. C. .	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	*Hey, Samuel, F.R.C.S. .	
51	Hoggard, Alfred .	25, Cavendish Road.
36	Hudson, Henry .	Oakwood, Roundhay.
120	Ingham, Samuel .	Headingley Hall.
87	Jayne, Rev. F. J., M.A. .	The Vicarage, Hanover Square.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir James, Bart.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.

90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	*Leather, J. Towlerton	
53	Lupton, Arthur	Headingley Hill.
95	Lupton, Arthur G.	Wellington Street.
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	Lupton, John	Moorlands, Headingley.
56	Lupton, William Walter	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares)	Wellington Street.
88	McGuire, Thomas	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R.	Avenue House, Woodhouse Lane.
61	Marshall, John, M.A. (P)	Derwent Island, Keswick.
72	Marshall, John, F.R.A.S.	Church Institute.
62	Marshall, Stephen A. (P)	Loughrigg Brow, Ambleside.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	*Maude, Edmund	
117	Middleton, Arthur	Hawk Hills, Chapel-Allerton.
66	Nicholson, A.H.	
30	Nicholson, Marshall	Middleton Hall, Beeston.
64	Nickols, Richard	Hill Top, Bramley.
67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, Henry	Weetwood.
28	*Passavant, P. W.	
82	Pearson, John Thomas	4, Belvoir Terrace, Scarborough.
93	Pebody, Charles	23, Albion Street.
11	Price, William Nicholson	Mount Pleasant.
38	*Ralph, John M.A.	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
105	Ryder, Charles	Westfield, Chapeltown.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.

119	Schunck, Edward	Gledhow Wood, Gledhow.
57	Stringer, John William	Inglebank, Far Headingley.
73	Teale, T. Pridgin, M.A.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
76	Tennant, Thomas	21, Blenheim Terrace.
78	*Tetley, F. W.	
58	Thompson, Chas. F.	College Road, Leeds.
49	Thorp, John Hall	Far Headingley.
79	Turner, Richard B.	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
71	Ward, John	Moor-Allerton House.
111	*Watson, William Henry	
41	Webb, Joseph S.	26, Park Row.
97	Weston, Edward	Newton Park Villa, New Leeds.
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph H.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M.	7, Woodland Grove, Newton Road.
85	Wilson, John	Seacroft Hall.
17	Wilson, Richard	Commercial Street.
35	Wood, Richard	Cattal, near York.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

2	Atkinson, J. H.	12, East Parade.
11	Ramskill, Josiah	29, Meadow Lane.
12	Scriven, William C.	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A. .	Meanwood.
2	Baines, Talbot, B.A. .	Albion Street.
3	Barr, Frederick Horatio .	North Grange Road, Headingley.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E. .	Cardigan Road.
7	Best, William Woodham	22, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T. .	Oriel House, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Blackman Lane.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George .	Hillary Mount, Woodhouse Lane.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley Thomas .	Highfield House, Headingley.
35	Croysdale, Joseph .	94, Beeston Road, Leeds.
16	Denny, T. G. .	2, Moor View, Hyde Park.
19	*Eddison, Frederic .	
65	Eddison, Octavius, B.A. .	70, Albion Street.
20	Eddison, Robert William	The Willows, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	Firth, William .	Burley Wood House.
48	Fraser, Henry John .	Fairlea, Wood Lane, Headingley.
69	Fraser, James B. .	44, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Green, Prof. A. H., F.R.S.	14, Ashwood Villas, Headingley.
72	Hardcastle, Mrs. R. A. .	30, Hyde Terrace.
27	*Hargrave, John .	
28	Hepper, John .	Clareville, Headingley.

80	Holmes, Joseph .	Chemical Works, Crown Street.
81	Holroyd, James .	Holly Bank, Headingley.
30	Holt, H. S. .	Woodville, Roundhay.
31	Illingworth, William .	Flower Bank, Burley, Leeds.
33	Irwell, Arthur F. .	17, New Station Street.
34	Jackson, W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	39, Leopold Street, New Leeds.
63	Jowitt, Miss E. M. .	Woodfield, Newton Hill.
37	*Kemplay, Miss .	
38	Lawson, Thomas .	Newton Hill, Potternewton.
39	*Lawson, John .	
88	Legard, Albert G., M.A. .	Whitkirk Grange.
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	The Hollies, Headingley.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch .	Park Row.
9	Mathers, John Shackleton	Hanover House, Leeds.
46	*Middleton, John William	
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Brook House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
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54	Nussey, Thomas .	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
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LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1888-9.

THE

SIXTY-NINTH REPORT

OF

THE COUNCIL

OF THE

LEEDS PHILOSOPHICAL & LITERARY SOCIETY,

AT THE CLOSE OF THE SESSION, 1888-9.

READ AT THE ANNUAL MEETING, MAY 7th, 1889.

Leeds:
PRINTED BY McCORQUODALE & CO. LIMITED.
1889.

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AT THE CLOSE OF THE

SIXTY-NINTH SESSION.

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	1888.	1889.
Original Proprietary Members (78 shares) ...	70	70
New Proprietary Members (121 shares) ...	97	94
Ordinary Members	4	2
New Ordinary Members	84	77
Annual Subscribers of £1 1s.	175	178
Annual Subscribers of 7s. 6d.	174	186
	604	607

The debt of the Society has been reduced from £468 18s. 11d. to £226 15s. 11d. This has been effected chiefly by the sale of Audubon's "Birds of North America," a work purchased by the Society at the time of its publication. It was a book not suited to public exhibition owing to the risk of injury, and was in no way essential to the Collections as a work of reference. Its sale was authorised by an Extraordinary Meeting of the Society, and it produced the net sum of £213 18s. od.

By a re-arrangement made between this Society and the Council of the Yorkshire College, of the proportions

of duties and of stipends of the Curator and Secretary, who hold offices in both Institutions, the Philosophical and Literary Society will in future years effect a moderate saving.

The lecture session is believed to have been one of exceptional interest. The meetings of the Society were as follows:—

Address on "Art." Prof. Herkomer, M.A., A.R.A. *Oct. 4th*, 1888.

2. "The Pygmy Races of Men." Prof. Flower, C.B., LL.D, F.R.S *Nov. 6th*, 1888.
3. "The Early Life-History of British Food Fishes." Edward E. Prince, B.A. *Nov. 20th*, 1888.
4. "National Defence." Admiral P. H. Colomb. *Dec. 4th*, 1888.
5. "The Characters of the Great Composers and the Characteristics of their Work." Prof. Ernst Pauer. *Dec. 18th*, 1888.
6. "The Life and Times of Samuel Richardson." Augustine Birrell, B.A. *Jan. 8th*, 1889.
7. "The Recent Discovery of Invisible Stars." Sir Robert Ball, LL.D., D.C.L., F.R.S. *Jan. 15th*, 1889.
8. "The Theory of Taste." The President (Thomas Marshall, M.A.). *Feb. 5th*, 1889.
9. "The Canary Islands." Rev. Canon Tristram, D.D., F.R.S. *Feb. 19th*, 1889.
10. "The Place of Imagination in Education." Rev. E. R. Conder, D.D. *March 5th*, 1889.
11. "Matthew Arnold." Prof. N. Bodington, M.A. *March 12th*, 1889.
12. "The Sacred Books of the East." Prof. F. Max Müller, M.A. *March 19th*, 1889.
13. Discussion Evening. Subject: "Examinations as a Test of Knowledge." Introduced by Prof. N. Bodington, M.A., and T. Pridgin Teale, M.A., F.R.S. *April 2nd*, 1889.
14. "The Effect of Parliamentary Control over our War Services." H. O. Arnold-Forster. *April 16th*, 1889.

Particular mention should be made of the obligation of the Society to those gentlemen who kindly presented their services on the above occasions, viz. :—Prof. Herkomer, Mr. Prince, Admiral Colomb, the President (Mr. T. Marshall), Rev. Dr. Conder, Prof. Bodington, Mr. Pridgin Teale, and Mr. Arnold-Forster.

The Musical Lecture by Prof. Pauer on the 18th December was given in place of the usual Conversazione, and the Council are pleased to know that its illustrations were highly appreciated by a large gathering of the Members and Subscribers.

A further series of Saturday Museum Lectures was delivered during the winter, with a large amount of success, and the thanks of the Society are due to the several lecturers for their services on those occasions. The subjects dealt with were—"The Structure of the Honey-Bee," by Prof. Miall, on Oct. 27th; "Crystals," by Sydney Lupton, M.A., on Nov. 3rd; "Woodpeckers," by Edgar R. Waite, on Nov. 10th; "The Iguanodon—a great extinct reptile," by Prof. Miall, on Nov. 17th; "Ancient and Modern Scarlet Dyes," by Prof. Hummel, on Nov. 24th; "China," by Bishop Scott, D.D., on Dec. 15th.

The principal piece of new work undertaken in the Museum during the past year has been the re-organisation of the general collections of Lepidoptera and Coleoptera; these have remained untouched for many years, and those visitors who know the Entomological collections will recollect that the species were simply arranged systema-

tically without descriptions or remarks. An attempt has been made to give the collection a popular as well as, to some extent, a scientific interest by calling attention to such species as illustrate mimicry, protective resemblance, unusual development of special organs, peculiar mode of life, economic importance, and so forth. The more noteworthy features are rather fully set forth in descriptive cards. The remaining orders will be dealt with next year. The collection of British Lepidoptera has been to some extent re-arranged, and the drawers have been cleaned throughout. The Mammalian collection has been cleaned, as also have the bones of Pleistocene Mammalia. The specimens of Ancient Metal Work have been remounted on glass. The extensive collection of Stone Implements has been treated in the same way. In accordance with a suggestion from Mr. Teale one case, containing Stone Implements, has been altered so as to permit of free access of filtered air. A few months' experience will show whether this plan is a sufficient protection against the dust which is so troublesome, and even destructive, in town museums. The Mineral collection has been cleaned, and the general Ornithological collection has received a considerable amount of attention. The Library has been cleaned, and partially re-arranged, while the work-room has been thoroughly put in order.

The collections generally are better classified and displayed than at any previous period, and it is believed that this increase in cleanliness and attractiveness is a direct addition to their educational value.

The contributions made during the year are not important. Mr. Edgar R. Waite has deposited a collection of Bird-skins in the cabinet, to replace those which were the property of Mr. Clarke.

The number of visitors to the Museum has been larger than for several years past, being 27,006. Last year it was 24,209.

Mr. Edgar R. Waite has been elected Sub-Curator of the Museum, in succession to Mr. W. E. Clarke, appointed Senior Assistant in the Natural History Department of the Museum of Science and Art, Edinburgh.

The Meteorological observations published by the Society for 1888 include returns of Sunshine for four stations at Leeds. These returns indicate as their leading feature a great deficiency of sunshine in the summer months, when its influence on vegetation is chiefly felt.

Your Council united with the Mayor and Corporation and the representatives of other Institutions in conveying, through the medium of a deputation who visited Bath, a cordial invitation to the British Association for the Advancement of Science, to hold its meeting in Leeds in the year 1890. The invitation was accepted, and our town is not likely to fail in offering a suitable reception to the distinguished body which paid us its last visit in 1858.

It is with mingled feelings that the Council refer to the appointment by the Lord Chancellor of their colleague, Dr. T. Clifford Allbutt, M.D. (Cantab.), LL.D., F.R.S., D.L., &c.,

as a Commissioner in Lunacy. No more hearty congratulations will be tendered to Dr. Allbutt upon this well-merited distinction than those which, in the name of the Society, your Council now offer him. But the loss to the Philosophical and Literary Society and to the intellectual life of Leeds will be very grave. Dr. Allbutt was elected on the Council in 1862, and has long held the office of Honorary Curator in Invertebrate Zoology. For three successive years, from 1878 to 1881, he filled the Presidential Chair, opening the first session of this period by a most able address on "The Productive Career of Great Men." Dr. Allbutt during many years has taken an active share in the deliberations of the Council and in the discussions at the Society's meetings. His professional eminence, his strong interest in all questions of education and culture, and his happy way of expressing his opinions—give weight to all his utterances, and it is no formal compliment to say that Dr. Allbutt's absence from our future meetings will be long regretted by all.

The Council refer with great regret to the death during the past year of their colleague, Mr. William Nicholson Price, M.R.C.S., &c. Mr. Price became a Member of the Society in 1853, and he was always among the most regular attenders of its meetings, and the most zealous of its friends. He was first elected on the Council in 1874, and was a Vice-President from 1886 to the time of his decease.

From its roll of Honorary Members the Society has lost during the year Laurence Oliphant, F.R.S., &c. He

was born in 1829, and was educated for the bar. Having travelled in South Russia in 1852, he accompanied Omar Pacha in several campaigns. Subsequently, when attached to Lord Elgin's Mission to China and Japan, he was severely wounded in the attack on the Embassy (1861). He represented the Stirling Burghs in Parliament for four years, and then, influenced by strong religious impressions, quitted Europe and lived in great retirement in Syria. He wrote accounts of his many travels and adventures, some novels, and a statement of his religious views. He died in the neighbourhood of London, aged 70 years.

By the death of Mr. F. d' A. Furtado, the Society has lost a promising and valued correspondent. Mr. Furtado was a native of St. Michael's, Azores, and attracted the attention of our former colleague, Dr. Thorpe, on the occasion of a visit to the Islands. Dr. Thorpe's friendly offices led to a correspondence with Mr. Furtado, to the receipt from him of many land-shells and fossils from the Azores, and to the presentation to him by the Society of a microscope and some books on Natural History. In 1881 Mr. Furtado was elected an Honorary Member of this Society. Some of his papers were translated into English, and published in the Annals of Natural History. At the time of his early death Mr. Furtado was an assistant in the Royal Museum of Lisbon.

The roll of Proprietary Members has lost two names of townsmen regarded with universal esteem—Mr. Arthur Lupton and Mr. John Jowitt. Mr. Lupton had done

the Society great service when its new buildings were raised by public contributions, and although both these gentlemen had been withdrawn from public service during the evening of their lives, their sterling personal characters and many good deeds will long be gratefully remembered by their fellow-townsmen.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1888.

1888.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	39·9	30·031	·57	·82
February	36·2	29·872	·73	·87
March	36·7	29·453	2·70	3·60
April	42·5	29·725	2·09	2·45
May	51·8	29·816	·63	0·83
June	53·6	29·783	2·56	3·00
July...	55·5	29·528	4·04	4·22
August	57·1	29·798	1·65	1·97
September	53·3	30·000	·61	0·76
October	47·2	29·820	·43	0·52
November	45·3	29·571	5·68	5·69
December	41·1	29·740	1·66	1·84

The mean monthly temperature was 46·7.

The mean monthly height of the barometer was 29·761 inches.

The total rainfall for the year was—Museum 23·35 inches and Woodhouse Cliff 26·57 inches. The average rainfall at the Museum for the ten years 1879-1888 is 26·02 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 84° on June 26th; and the minimum 21° on February 14th.

The greatest barometric pressure was 30·560 inches on January 18th, the temperature of the mercury being 50°; the least pressure was 28·606 inches on March 28th, the temperature of the mercury being 51°.

The greatest fall of rain (during 24 hours) was ·98 inches on November 13th.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

SUNSHINE AT LEEDS IN 1888.

The observations were made by Jordan's Photographic Sunshine Recorder, at the following stations:—

1. The Museum, situate in the centre of the town; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the town; elevation, 330 feet; residential suburb. Mr. Richard Reynolds.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the town; elevation, 475 feet; on the fringe of the borough. Mr. C. S. Irvine.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the town; elevation, 200 feet; industrial district. Dr. Allan.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	14·3	5·6
	2	20·8	8·0
	3	30·5	11·8
	4	16·0	6·2
FEBRUARY	1	39·2	13·5
	2	55·0	19·0
	3	67·0	23·2
	4	40·7	14·1
MARCH..	1	59·5	16·2
	2	82·8	22·5
	3	87·7	23·8
	4	76·4	20·9
APRIL	1	51·6	12·4
	2	84·8	20·4
	3	92·2	22·2
	4	81·7	19·7
MAY	1	154·3	32·0
	2	200·3	41·5
	3	186·0	38·7
	4	178·9	37·1
JUNE	1	109·6	22·2
	2	114·0	23·0
	3	119·2	24·1
	4	112·4	22·7
JULY	1	72·9	14·7
	2	85·2	17·2
	3	85·4	17·2
	4	80·0	16·1
AUGUST	1	83·8	18·6
	2	101·3	22·6
	3	109·8	24·4
	4	96·9	21·6
SEPTEMBER	1	64·2	17·0
	2	86·8	23·0
	3	104·6	27·7
	4	85·2	22·6
OCTOBER	1	57·6	17·5
	2	75·7	23·0
	3	83·6	25·4
	4	68·0	20·7
NOVEMBER	1	11·6	4·4
	2	18·5	7·0
	3	27·3	10·3
	4	13·3	5·0
DECEMBER	1	2·4	·9
	2	19·6	8·0
	3	30·0	12·4
	4	13·3	5·5

SUMMARY FOR THE YEAR.

Museum	16·2	per cent. of possible duration.
Woodhouse Cliff ..	21·2	,, ,, ,,
Lawnswood	23·0	,, ,, ,,
Burmantofts	19·4	,, ,, ,,
	19·9	per cent. mean.

The Meteorological Office publishes the following records of Sunshine in 1888, as observed at stations taken as representing specified districts:—

	Percentage of possible duration.
Scotland, N. (Stornoway)	26
,, E. (Aberdeen, Braemar, Marchmont)	28
,, W. (Glasgow, Douglas, Isle of Man)	29
England, N.E. (Durham, York)	26
,, N.W. (Penrith, Stonyhurst, Blackpool, Llandudno)	27
,, Mid. (Bawtry, Leicester, Oxford, &c.)	27
,, S. (London, Hastings, Southampton, &c.)	28
,, E. (Hillington, Geldestone, Ingatestone)	29
,, S.W. (Pembroke, Falmouth, Plymouth, &c.)	33
Ireland, N. (Armagh, Markree Castle)	27
,, S. (Dublin, Parsonstown, Valencia)	31
Channel Islands (Jersey)	39

SUMMARY.

27·5 per cent. mean for United Kingdom.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the Year 1888-9.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1888		—		0	8	2
,, Annual Subscriptions, viz.:—						
85 New Proprietary Members, at 21s. ...	89	5	0			
3 Original Ordinary do. 42s. ...	6	6	0			
68 New Ordinary do. 21s. ...	71	8	0			
154 Annual Subscribers, at 21s. ...	161	14	0			
29 New Annual Subscribers, at 21s. ...	30	9	0			
161 Annual Subscribers, at 7s. 6d. ...	60	7	6			
27 New do. at 7s. 6d. ...	10	2	6			
,, Arrears	10	10	0			
				440	2	0
,, Rent, viz.:—						
Cellars	30	0	0			
Lecture Room	166	6	6			
				196	6	6
,, Receipts from Visitors to Museum		...		112	10	6
,, Sale of Catalogues	1	9	3			
,, Sundries	2	17	6			
				4	6	9
,, Sale of Audubon's "American Birds" ...	213	18	0			
,, Sale of Forfeited Shares	27	0	0			
				240	18	0
,, Balance Due to Bank...		...		226	15	11
				£1,221	7	10

PAYMENTS.	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1888 ...		—		468	18	11
,, Repairs and Alterations	42	13	11			
,, Rates and Taxes	3	9	7			
,, Fire Insurance...	13	15	0			
,, Coals, &c.	24	10	11			
,, Gas	18	7	1			
,, Cleaning	6	8	1			
				109	4	7
,, Salaries...	362	9	2			
,, Fee to Auditor...	2	2	0			
				364	11	2
,, Collections, viz.:—						
Geological	5	8	1			
Zoological	16	14	9			
Library	38	14	7			
				60	17	5
,, Postages	9	9	9			
,, Advertising and Printing	46	9	5			
,, Lectures	94	15	5			
,, Interest and Bank Commission	26	5	0			
,, Sundries	15	13	1			
				192	12	8
,, Scientific Apparatus	3	10	3			
,, Electric Lighting	19	13	7			
				23	3	10
,, Balance in Hand				1	19	3
				£1,221	7	10

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 27th, 1889.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1888-9.

ZOOLOGY.

Nest of Edible Swift	Mr. Edward Atkinson, Leeds.
Skull of Albatross	Mrs. Greenwood, Leeds.
Ostracion	Mr. Hy. Abbott, Aberford.
Sparrowhawk, Redwing, and Stone-chat	Dr. Eddison, Leeds.
Lesser Spotted Dog-Fish	Mr. T. H. Nelson, Redcar.
Lizard	Miss Birkhead, Leeds.
Models of the Eggs of the Great Auk and Apteryx	Mr. G. A. Widdus, Leeds.
Burbot	Mr. Poulter, Leeds.
Canadian Ground Squirrel	Mr. Chas. Ryder, Gledhow.

PALÆONTOLOGY.

Tibia of Moa	Mr. Jas. Hall, New Zealand.

ARCHÆOLOGY.

Two Sets of Flints and Steels, Earpick, Tweezers, and Brass Clothes Pins, used by the Paharris of Rumaon, Himalayas	Mr. T. S. Kennedy, Wetherby.

PUBLICATIONS.

Catalogue of Marsupalia and Monotremata, by Oldfield Thomas, F.Z.S.	British Museum.
Catalogue of Chelonians, Rhynchocephalians, and Crocodiles, by G. A. Boulenger	British Museum.
Catalogue of Fossil Fishes, Part I., by A. S. Woodward, F.G.S., F.Z.S.	British Museum.

Catalogue of Fossil Cephalopoda, Part I., by A. H. Foord, F.G.S. ...	British Museum.
Catalogue of Fossil Reptilia and Amphibia, Part I., by Richard Lydekker, B.A., F.G.S.	
Catalogue of Birds, Vol. XIV., by P. L. Sclater, M.A., F.R.S.	
Notes on Human Ordure and Urine, by Capt. J. G. Bourke	The Author.
The "Times" Register of Events, 1887	The "Times."
Cape Meridian Observations, 1882-4	Cape Astronomer-Royal.
System und Morphologie der Oligochaeten, by Dr. Franz Vejdovsky...	Akademie der Wissenschaften in Wien (through Dr. A. Fritsch).
Fauna der Gaskohle, by Dr. A. Fritsch, Part IV.	Purchased.
20 Plates on Comparative Anatomy, by C. G. Carus, M.D.....	Mr. Edward Atkinson.
Cephalopode, Genre Ommatostrephes, by Arrudo Furtado, Museum, Lisbon	Royal Academy of Sciences, Lisbon.
Cause of Light, by G. T. Carruthers, M.A.	The Author.
Planets upon Cardioides do. ...	
Eruption of Krakatoa, Edited by G. J. Symons, F.R.S.	Purchased.
The Eskimo of Hudson's Strait, by F. F. Payne.....	The Author.
Occasional Papers of the Royal University of Norway	The University.
Occurrence of Pallas' Sand Grouse in Ireland, by R. F. Scharff	The Author.
The Great Trigonometrical Survey of India, Vol. X.	Secretary of State in Council of India.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History	Purchased.
Geological Magazine	
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Atti della R. Accademia dei Lincei...	The Society.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society.....	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Royal Historical and Archæological Association of Ireland	The Association.
Journal of the Anthropological Institute	The Institute.

ANNUALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Society of Edinburgh	The Society.
Transactions of do.	
Proceedings and Transactions of the Royal Irish Academy	The Academy.
Scientific Proceedings of the Royal Dublin Society (several Parts).....	The Society.
Scientific Transactions do. (several Parts)	

Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Papers and Proceedings of the Royal Society of Tasmania	The Society.
Proceedings and Transactions of the Royal Society of Canada	The Society.
Proceedings of the Royal Society of Queensland	The Society.
Annual Report of the Royal Cornwall Polytechnic Society	The Society.
Bulletin Société Impériale, Moscow...	The Society.
British Association Report	The Association.
Report of the Smithsonian Institution Smithsonian Miscellaneous Collections	The Institution.
Transactions of the Academy of Science of St. Louis, Vol. V.....	The Academy.
Transactions and Proceedings of the New Zealand Institute	The Institute.
Annual Report, Middlesex Hospital, 1887	The Hospital.
Annual Reports of the Trustees of the Cooper Union for the Advancement of Science	The Union.
Victorian Year-Book, 1887-8. By Henry Heylyn Hayter, C.M.G. ...	The Author.
Bulletin of the Essex Institute, U.S.A.	The Institute.
Annual Report of Harvard College	The College.
Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society, 1888.....	The Society.
Proceedings of the Glasgow Philosophical Society, 1887-8	The Society.
Transactions of the American Philosophical Society..... Proceedings do. (several Parts a year)	The Society.

Transactions of the Leicester Literary and Philosophical Society.....	The Society.
Annual Report of the Birkenhead Literary and Scientific Society ...	The Society.
Memoirs of the Manchester Literary and Philosophical Society..... Proceedings do.	The Society.
Proceedings of the Liverpool Literary and Philosophical Society.....	The Society.
Annual Report of the Sheffield Philosophical and Literary Society	The Society.
Proceedings of the Canadian Institute	The Institute.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 Parts a year)	The Academy.
Proceedings of the American Academy of Arts and Sciences.....	The Academy.
Annual Report of the Historical and Scientific Society of Manitoba ...	The Society.
Memoires de la Société d'émulation d'Abbeville	The Society.
Journal of the Royal Dublin Society (about once a year)	The Society.
Journal and Proceedings of the Royal Society of New South Wales	The Society.
Journal and Annual Report of the Royal Institution of Cornwall	The Institution.
Journal of the Elisha Mitchell Scientific Society, 1888.....	The Society.
Greenwich Observations, 1886.....	The Astronomer-Royal.
Transactions of the Astronomical Observatory of Yale University ...	The University.
Memoirs of the Royal Astronomical Society.....	The Society.
Symons's British Rainfall, 1887.....	Purchased.
Annals of the Cape Observatory.....	Cape Astronomer-Royal.
Monographs of the Palæontographical Society.....	Purchased.

Journal of the Royal Geological Society of Ireland.....	The Society.
Proceedings of the Liverpool Geological Society	The Society.
Transactions of the Manchester Geological Society	The Society.
Transactions of the Leeds Geological Association	The Association.
Annual Report of the Department of Mines, N.S.W.	The Department.
Geological and Natural History Survey of Canada ..... Annual Report do.	Department of the Interior.
Geological Record for 1880-4	Purchased.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1887-8	The Club.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, Vol. IX., Part II.	The Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club	The Club.
Proceedings of the Boston Society of Natural History, U.S.A. ..... Memoirs of do.	The Society.
Publications of the Ray Society	Purchased.
Annual Report of the Curator of the Museum of Harvard College	The College.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien, 1888.....	The Society.
Journal of the Historical and Archæological Association of Ireland	The Association.
Report of Associated Architectural Societies	The Society.
Bollettino delle Publicationi Italiane, 1888-9	

LIST OF OFFICERS AND COUNCIL,

1889-90.

OFFICERS.

PRESIDENT	T. PRIDGIN TEALE, M.A., F.R.S.
VICE-PRESIDENTS . .	THOMAS MARSHALL, M.A. THOMAS SCATTERGOOD.
HONORARY SECRETARIES ..	RICHARD REYNOLDS, F.I.C., F.C.S. SYDNEY LUPTON, M.A.
TREASURER	HENRY OXLEY.
HONORARY CURATOR IN GEOLOGY	T. PRIDGIN TEALE, M.A., F.R.S.
HONORARY CURATOR IN ZOOLOGY	EDWARD ATKINSON, F.L.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

COUNCIL.

TALBOT BAINES, B.A.	CHARLES PEBODY.
WM. WOODHAM BEST.	ARTHUR SMITHELLS, B.Sc.
NATHAN BODINGTON, M.A.	J. H. WICKSTEED, M.Inst.C.E.
A. G. LEGARD, M.A.	J. J. WILLSON
Rev. J. H. D. MATTHEWS, M A.	EDMUND WILSON.

General Curator . .	LOUIS C. MIALL, F.L.S., F.G.S.
Secretary . . .	W. F. HUSBAND, LL.B.
Sub-Curator. . .	EDGAR R. WAITE.

LIST OF MEMBERS AND SUBSCRIBERS,

1889-90.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Farnley.
4	Arthington, Robert	Headingley.
5	Baines, Sir Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	Beckett, W., M.P. (2 shares)	Nun-Appleton, York.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	22, Sholebroke Avenue.
11	*Brown, James	
31, 62	Brown, S. J. (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.
46	George, Thos. Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.

34, 35	Gott, Very Rev. John, D.D. (2 shares) .	The Deanery, Worcester.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
30	Horsfall, J., M.A., F.R.C.S.	Hillary House.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, Mrs. John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis M., M.A.	Wellington Street.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	13, Belsize Avenue, London, N.W
65	*Marshall, J. G. .	
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
63	Marshall, Stephen A., B.A.	Loughrigg Brow, Ambleside.
67	Marshall, V. A. E., B.A.	Monk Coniston, Ambleside.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.

71	Tatham, George .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	The Grange, Bedale.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	27, Hanover Square.
76	*Ward, William Sykes .	
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace, Virginia Rd.
27	Wood, Robert Henry .	15, Bainbrigge Road, Headingley.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	Starbeck, near Harrogate.
32	Atkinson, Edward, F.L.S.	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	3, Cavendish Road.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.
5, 6	Brown, G. W. (2 shares) .	Heathfield, Ilkley.
89	Buckton, Joshua .	Meanwood.
8	Buckton, Walter .	27, Ladbroke Square, London, W.

86	Carter, J. B.	Elm House, Potternewton.
9	*Chadwick, William	
14	Conyers, W. H.	The Hills, Ilkley.
45	Craven, John	3, Beech Grove Terrace.
98	Craven, Joseph	1, Beech Grove Terrace.
104	Crawford, John William	Newton Lane.
26	Dawson, Oswald	Caledonian House, Caledonian Rd.
19	Fairbairn, Sir Andrew	Askham Richard, near York.
118	Flitch, John R.	Chapel-Allerton.
52	Fraser, Mrs. James B.	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, Wm. Henry (P) (9 shares)	Armley House.
22	Hargrave, Charles	St. Agnesgate House, Ripon.
23	*Hargrave, James	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William	Spring Bank, Headingley.
81	Hatch, S. C.	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H.	Wortley, near Leeds.
51	Hoggard, Alfred	25, Cavendish Road.
36	Hudson, Henry	Oakwood, Roundhay.
120	Ingham, Samuel	Headingley Hall.
96	Jepson, Edward George	20, Springfield Mount.
39	Jowitt, Robert Benson	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas	Weetwood Mount, Leeds.
43	*Kitson, James	
46	Kitson, J. Hawthorn	Elmete Hall, Roundhay.
47	Kitson, Sir James, Bart.	Gledhow Hall.
48	Kitson, Mrs. F. W.	Burley Hill, Leeds.
90	Lawson, Frederick W.	Woodfield, Wood Lane.
50	Leather, Ernest Arthur	
53	*Lupton, Arthur	

95	Lupton, Arthur G. .	Wellington Street.
21	Lupton, Edgar .	Moorlands, Headingley.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, William Walter .	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Wellington Street.
62	MacCarthy, Charles D. .	Bank of England, Leeds.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
61	Marshall, John, M.A. (P) .	Derwent Island, Keswick.
72	Marshall, John, F.R.A.S.	Church Institute.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	*Maude, Edmund .	
117	Middleton, Arthur .	Hawk Hills, Chapel-Allerton.
66	Nicholson, A.H. .	
30	Nicholson, Marshall .	Middleton Hall, Beeston.
64	Nickols, Richard .	Hill Top, Bramley.
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, Thirsk.
93	Pebody, Charles .	55, Albion Street.
11	*Price, William Nicholson	
38	*Ralph, John M.A. .	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
18	Robson, A.W.M., F.R.C.S.	Hillary Place.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, John Edward .	Gledhow Wood, Gledhow.

57	Stringer, John William .	Inglebank, Far Headingley.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
76	*Tennant, Thomas .	
78	*Tetley, F. W. .	
58	Thompson, Chas. F. .	34, College Road, Leeds.
49	Thorp, John Hall .	Far Headingley.
79	Turner, Richard B. .	Oakleigh, Buxton.
80	Wailes, William .	28, Albion Street.
71	Ward, John .	Moor-Allerton House.
111	*Watson, William Henry .	
41	Webb, Joseph S. .	26, Park Row.
97	Weston, Edward .	Newton Park Villa, New Leeds.
42	Whiting, John .	Regent Villas, Headingley.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M. .	7, Woodland Grove, Newton Road.
85	Wilson, John .	Seacroft Hall.
17	Wilson, Richard .	Commercial Street.
35	Wood, Richard .	Cattal, near York.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah .	29, Meadow Lane.
13	Stratten, Rev. J. R. .	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert	13, St. John's Terrace.

2	Baines, Talbot, B.A. .	Albion Street.
25	Barr, Prof. Archibald, B.Sc.	Ashwood Villas, Headingley.
3	Barr, Frederick Horatio .	North Grange Road, Headingley.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E. .	Cardigan Road.
7	Best, William Woodham	22, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T. .	Oriel House, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Blackman Lane.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George .	Hillary Mount, Woodhouse Lane.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley Thomas .	Highfield House, Headingley.
35	Croysdale, Joseph .	94, Beeston Road, Leeds.
16	Denny, T. G. .	2, Moor View, Hyde Park.
32	Dixon, A. S. .	Woodlands, Harehills Lane.
19	*Eddison, Frederic .	
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William	The Willows, Adel.
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	Firth, William .	Burley Wood House.
48	Fraser, Henry John .	Granthorpe House, near York.
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
12	Hadow, Reginald .	Bank of England, Leeds.
72	Hardcastle, Mrs. R. A. .	30, Hyde Terrace.
27	*Hargrave, John .	
28	Hepper, John .	Clareville, Headingley.
80	Holmes, Joseph .	Chemical Works, Crown Street.
81	Holroyd, James .	Holly Bank, Headingley.
30	Holt, H. S. .	Woodville, Roundhay.
31	Illingworth, William .	Flower Bank, Burley, Leeds.

33	Irwell, Arthur F.	17, New Station Street.
34	Jackson, W. L., M.P.	Allerton Hall, Leeds.
67	Jefferson, Robert P.	39, Leopold Street, New Leeds.
63	Jowitt, Miss E. M.	Woodfield, Newton Hill.
37	*Kemplay, Miss	
38	Lawson, Thomas	Newton Hill, Potternewton.
39	*Lawson, John	
88	Legard, Albert G., M.A.	Whitkirk Grange.
23	Lupton, Prof. Arnold	6, De Grey Road.
44	McCheane, Miss	The Hollies, Headingley.
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
9	Mathers, John Shackleton	Hanover House, Leeds.
46	*Middleton, John William	
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, Leeds.
70	Nelson, James Henry	Brook House, Sandal, Wakefield.
58	Nicol, W. H.	2, Clarendon Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Springville, Shaw Lane.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John	Moorfield Lodge, Headingley.
17	Redmayne, John	39, Sholebroke Avenue, Leeds.
62	Riley, H. W.	131, Briggate.
73	Rowley, Walter, C.E.	Alder Hill, Meanwood.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
76	Smithells, Prof. A., B.Sc.	The Yorkshire College.
71	Stables, James	Lane Ends, Horsforth.
36	Tennant, John	43, Albion Street.

77	Titley, Mrs. Anthony	Manor House, Victoria Grove.
78	*Titley, T. A.	
79	Tottie, Mrs. J. W. (P)	The Grange, Bedale.
82	Walker, H. B.	Heath Cottage, Moortown.
64	Walker, W. W.	12, South Parade.
83	Ward, Edmund	19, Bainbrigge Road, Headingley.
57	Ward, George, F.C.S.	Buckingham Ter., Headingley.
90	Ward, William	32, Hyde Terrace.
85	Willson, J. J.	2, Moorland Terrace.
42	Wilson, Mrs. Richard	Brown's Bank, Commercial St.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	Woodhouse Lane.
Addyman, J. W.	15, East Parade.
Albrecht, Martin	Bleak House, Headingley.
Appleyard, T. W., Jun.	Oak Lea, Cardigan Road.
Armistead, Edwin	39, Louis Street.
Asquith, John Robert	Bond Place.
Atkinson, Miss	8, Woodhouse Square.
Atkinson, Samuel	Moor-Allerton Lodge.
Barber, Miss	34, Westbourne Terrace.
Barran, Alfred	Cumberland Road, Headingley.
Barran, Rowland Hirst	Shaw Lane, Headingley.
Bartholomew, W. H., C.E.	Ridge Way House.
Bennedik, Julius	Whernside, Wood Lane.
Bentfield, Charles	Shaw Lane, Headingley.
Berridge, H. D., M.A.	The Grammar School, Leeds.
Birch, Prof. De Burgh, M.D.	16, De Grey Terrace.
Bothamley, C. H., F.C.S.	The Yorkshire College.
Braithwaite, Richard Hale	Kirkstall Lane, Headingley.
Branson, F. W., F.C.S.	24, Mount Preston.

Brigg, Matthew A.	12, Sholebroke Avenue, Leeds.
Brigg, Thomas S.	Cromer Terrace.
Briggs, Miss	Ravenscourt, Moor-Allerton.
Brown, A. Kemp, B.A	11, Richmond Road, Headingley.
Brown, W. H.	19, Queen Street.
Buckley, James	Woodville House, Burley Mount.
Buckley, J. C.	Longfield, Headingley.
Buckton, Richard	Woodbourne, Roundhay Park.
Bulmer, Charles	Blenheim Lodge.
Bulmer, George B.	Calverley Chambers, Victoria Sq.
Butler, Edmund	Kirkstall Forge.
Butler, Edward	Park Square.
Campbell, Archibald	23, Hyde Terrace.
Chadwick, Charles M., M.A., M.D.	3, Park Square.
Chorley, R.	Basinghall Street.
Clark, Miss	Potternewton.
Clarke, Charles Henry	Newton House, Spencer Place.
Clemons, G. H.	Burton Crescent, Far Headingley.
Cleveland, Rev. W. H., M.A.	Gateforth Vicarage, Selby.
Conder, Rev. E. R., D.D.	1, Newton Grove, New Leeds.
Connal, B. M., B.A.	13, Brudenell Grove, Hyde Park.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Cousins, W. J.	Normanhurst, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	Vernon House, Roundhay.
Croft, E. O.	8, Clarendon Road.
Croysdale, John	Monk Bridge Road, Headingley.
Dalton, George	The Yews, North Hill Road.
Dawson, T.	Caledonian Road.
Deane, E. E.	Batley.
Dobson, Dr. Joseph	27, Burley Lawn.
Dobson, Mrs. J.	Woodland House, Newton Road.

Drake, Dr. F. H.	Otley Road, Headingley.
Ellison, James Edward	10, De Grey Road.
Fawcett, J. E.	Apperley Bridge.
Firth, William, Junr.	Woodsley House.
Flockton, William	Hopewell House, Oulton.
Foster, Frederick	Woodlesford.
Foster, George	Bleak House, Harehills.
Gardner, Wilson	Brookfield Terrace, Headingley.
Garlick, Miss	Hyde Terrace.
Goodson, Mrs.	Bedford House, Roundhay.
Green, Mrs. Thomas	Asket Hill, Roundhay.
Griffith, Prof. T. W., M.D.	23, Park Square.
Grimshaw, A.	Knostrop Hall, Leeds.
Hall, Frederick, M.D.	St. Mark's Villas.
Hall, William	Moor Lane, Headingley.
Hallilay, John	28, Burley Road.
Hannam, William Simpson	4, East Parade.
Harland, J. Walter	Headingley.
Hartley, R. N., M.B.	29, Blenheim Terrace.
Hartnell, Wilson	8, Blenheim Terrace.
Hassé, A.	31, Commercial Street.
Hellier, J. B., M.D.	De Grey Terrace.
Hepworth, S. C.	Dewsbury.
Hewetson, H. B.	9, Hanover Square.
Hindle, J. E.	23, Park Row.
Hirsch, Paul	29, Cookridge Street.
Hirst, J. A.	Adel.
Holgate, Benjamin, F.G.S.	Regent House, Grosvenor Road.
Hubbersty, J. P.	13, East Parade.
Hummel, Prof. J. J.	The Yorkshire College.
Ingham, J. P.	5, Blenheim Terrace.
Irvine, Charles S.	Lawnswood, Adel.
Jackson, J.	Airedale Cliff, Newlay.

Jackson, Richard	Beech Villa, Cardigan Road.
Jackson, Miss S.	15, Eldon Place.
Jefferson, J. S.	4, Woodhouse Square.
Jessop, G. W.	Woodcliffe, Rawdon.
Jessop, T. R., F.R.C.S.	32, Park Square.
Johnston, W. D.	2, Beech Grove Terrace.
Jones, Frank W.	2, Moorland Road.
Josephy, Bernard	25, Hyde Terrace.
Josephy, Henry	5, Beech Grove Terrace.
Joy, W. Lomas	Headingley.
Kettlewell, C. B.	Enmoor Lodge, Chapeltown Rd.
Kitchen, Frederick C.	Regent Villas, Cumberland Road.
Knight, Miss R.	Far Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Hope Foundry, Mabgate.
Lewkowitsch, J., Ph.D.	6, Warwick Place.
Little, F. Buller	Woodlands, Chapel-Allerton.
Lupton, E. A.	Horsforth.
Lupton, Harry	Do.
Matterson, Miss	Cavendish House, Cavendish Rd.
Megson, Albert	Spencer Place, New Leeds.
Moore, Edwin	50, Cowper Street, New Leeds.
Moorhouse, Samuel	Sholebroke Avenue.
Morley, R. B.	2, Westfield Terrace, Chapeltown.
Morrison, Sir George	Town Hall, Leeds.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, Charles Vincent	Headingley Lane.
Newstead, J. S.	Woodville, Horsforth.
Nicholson, J. C.	Ashfield, Headingley.
Nicholson, Joseph	Wheatfield Lodge, Headingley.
Nicholson, W. B.	The Mount Villas, Burley, Leeds.
Nield, Wm.	Old Manor House, Headingley.
Norwood, William	Newmillerdam, near Wakefield.

Oates, C. G.	Meanwoodside.
Passavant, Miss Laura M.	29, Virginia Road.
Peate, Jonathan	Guiseley.
Pepper, J. E.	7, Cromer Terrace.
Pepper, Miss H. N.	Newton Green Hall.
Phillips, John Henry	Hazel House, Methley.
Pickles, J. J.	105, Camp Road.
Plummer, J. E.	Tannery House, Headingley.
Potter, F. H.	15, Park Row.
Powell, William	4, Queen Square.
Ransome, Prof. Cyril, M.A.	4, De Grey Road.
Rhodes, John H.	27, Park Square.
Richardson, W. W.	Cliff Road, Hyde Park.
Rickards, Alfred	Wortley.
Rider, James	Pease's Buildings, South Parade.
Roberts, Mrs.	Holly Bank, Headingley.
Roberts, Edwin	14, Woodhouse Square.
Robinson, Edmund	42, Park Square.
Roebuck, W. Denison, F.L.S.	Sunny Bank.
Rogers, Prof, L. J., M.A., Mus.B.	13, Beech Grove Terrace.
Rooke, Charles S.	Newton Hill, Potternewton.
Sanders, J. A.	5, Blenheim Square.
Sanders, T. W.	Do.
Saville, H.	15, Springfield Place.
Scatcherd, Oliver	Morley, near Leeds.
Simpson, Miss	Belle Vue Villa, Chapeltown Rd.
Slade, Robert	14, Springfield Mount.
Smith, Dr. Thomas	Leathley Lodge, Hunslet Road.
Snowdon, Walter	Batley Carr, near Dewsbury.
Somers, R. M.	47, Briggate.
Spark, F. R.	29, Hyde Terrace.
Stables, Marshall	Hope Villa, Armley.
Stead, C. F.	The Knoll, Baildon.

Stockdale, T.	Spring Lea.
Stroud, Prof. William, D.Sc., B.A.	Ashwood Villas, Headingley.
Stubbins, John, F.G.S., F.R.M.S.	Inglebank, Far Headingley.
Sutcliffe, Francis	Torquay Terrace, Shaw Lane.
Talbot, Grosvenor	Southfield, Burley, Leeds.
Tetley, C. F., M.A.	Cardigan Road, Headingley.
Thompson, Vincent T.	195, Belle Vue Road.
Thompson, Miss	St. Mark's Villas.
Tiffany, George John	17, Grove Terrace.
Titterington, Rev. W. T.	Fulneck, near Leeds.
Walker, A. T.	Bainbrigge Terrace, Headingley.
Walker, James	Newton Park.
Walker, George	Do.
Walker William	Osmondthorpe Hall.
Watson Charles	Burton Grange, Far Headingley.
Waudby, William	Clifton House, Newton Hill.
Wertheimer, J., B.Sc., B.A.	Mechanics' Institute, Leeds.
West, Leonard H.	86, Albion Street.
Whitham, T.	Bramhope.
Willans, J. W.	The Woodlands, Kirkstall.
Wood, John	11, St. Mark's Terrace.
Woodhouse, Edwin	The Grange, Armley.
Wray, Robert	40, Brunswick Street.
Wright, A.	Borough Brewery, Leeds.
Yewdall, Edwin	56, Wade Lane.
Zossenheim, M.	Rose Mount, North Hill Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Abbott, Mrs. J.	Woodhouse Lane.
Albrecht, Mrs. M.	Bleak House, Headingley.
Allbutt, Miss	Carr Manor, Meanwood.
Atkinson, Miss	Moor-Allerton Lodge.
Atkinson, Mrs. E.	16, Blenheim Terrace.
Atkinson, Miss Eleanor S.	8, Woodhouse Square.
Barber, Miss B.	34, Westbourne Terrace.
Barran, Mrs. John	Chapel-Allerton Hall.
Bartholomew, Miss Mary	Ridge Way House.
Bedford, Miss	Woodhouse Cliff.
Bedford, Miss J.	Do.
Bentfield, Mrs. C.	Shaw Lane, Headingley.
Biggs, C. W. V.	16, Blenheim Terrace.
Birch, Mrs.	16, De Grey Terrace.
Braithwaite, Mrs. R. H.	Kirkstall Lane, Headingley.
Branson, Mrs. F. W.	24, Mount Preston.
Brigg, Miss Mary	12, Sholebroke Avenue.
Brigg, Mrs. T. S.	Cromer Terrace.
Buckley, Mrs. James	Woodville House.
Buckton, Mrs. R.	Woodbourne, Roundhay Park.
Bulmer, Mrs. Charles	Blenheim Lodge.
Bulmer, Miss Ada	Do.
Bulmer, Jasper	Do.
Butler, Mrs. Edmund	Kirkstall Forge.
Butler, Miss	Do.
Butler, Miss	Park Square.
Butler, Miss M. E.	Do.
Calverley, Miss F.	47, Briggate.
Campbell, Mrs. A.	23, Hyde Terrace.
Clemons, Mrs. G. H.	Burton Crescent.

Colquhoun, Miss	Newton Green Hall.
Connon, Mrs. J. W.	Park Row.
Cooke, Mrs. W.	Moorfield House, Moor-Allerton.
Cousins, Mrs.	Normanhurst, Moor-Allerton.
Crampton, Miss	Vernon House, Roundhay.
Crampton, Miss Louisa	Do. do.
Crawford, Mrs. J. W.	Newton Lane.
Croft, Mrs.	8, Clarendon Road.
Croysdale, Mrs. J.	Monk Bridge Road, Headingley.
Dalton, Mrs. G.	The Yews, North Hill Road.
Day, Miss	MissMatterson,Cavendish House.
Dobson, Mrs.	27, Burley Lawn.
Dobson, Miss	Woodland House.
Dobson, Miss C.	Do.
Ellison, Miss	10, De Grey Road.
Fairley, Mrs. T.	8, Newton Grove.
Goodall, Miss M.	Mr. Saville, 15, Springfield Place.
Green, Miss Penrose	Asket Hill, Roundhay.
Hall, Mrs. F.	St. Mark's Villas.
Hall, Miss	Do.
Hall, Mrs. W.	Moor Lane, Headingley.
Hall, Miss	Do.
Hallilay, Mrs.	28, Burley Road.
Hallilay,Richard Percy	Do.
Hannam, Mrs. W. S.	4, East Parade.
Harland, Mrs. J. W.	Headingley.
Hartnell, Mrs. Wilson	8, Blenheim Terrace.
Hassé, Mrs.	31, Commercial Street.
Hepper, Miss	Clareville, Headingley.
Hepworth, Mrs. S. C.	Dewsbury.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hirsch, Mrs. Paul	29, Cookridge Street.
Hirsch, Miss T.	Do.

Hogg, Mrs. Henry	Mr. Hartley, Blenheim Terrace.
Holgate, Mrs. B.	Regent House, Headingley.
Holroyd, Mrs.	Holly Bank, Headingley.
Holroyd, Miss	Do. do.
Holroyd, Miss Jane	Do. do.
Hummel, Mrs.	The Yorkshire College.
Jackson, Mrs.	Beech Villa, Cardigan Road.
Jackson, Miss	Allerton Hall, Leeds.
Jefferson, Miss M.	4, Woodhouse Square.
Jessop, Mrs. T. R.	32, Park Square.
Jessop, Miss	Do.
Johnston, Miss	2, Beech Grove Terrace.
Jones, Miss	2, Moorland Road.
Josephy, Mrs. B.	25, Hyde Terrace.
Josephy, Mrs. H.	5, Beech Grove Terrace.
Joy, Mrs. W. Lomas	Headingley.
Joy, Miss	Do.
Kettlewell, Miss E.	Enmoor Lodge, Chapeltown Rd.
Kettlewell, Miss F. A.	Do. do.
Kitchen, Mrs. F. C.	Regent Villas.
Kitchen, Miss	Do.
Klitz, Miss	Mr. Jessop, 32, Park Square.
Knight, Miss E.	Far Headingley.
Knight, Miss S. E.	Do.
Lawson, Miss	Bramhope.
Little, Mrs. F. Buller	Woodlands, Chapel-Allerton.
Little, Miss Edith	Do. do.
Malcolm, Mrs. J. C.	Brighton Villa, New Leeds.
Mathers, Miss	Hanover House.
Moorhouse, Mrs. S.	Sholebroke Avenue.
Morley, Mrs.	2, Westfield Terrace.
Morrison, Lady	Town Hall, Leeds.
Myers, Miss	Cavendish House.

Myers, Miss	Grove House, Roundhay.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Nelson, Miss A. B.	St. John's Cottage, St. John's Rd.
Nelson, Miss C. E.	Do. do.
Nelson, Miss Louisa	Do. do.
Nicholson, Mrs. J. C.	Ashfield, Headingley.
Nicholson, Mrs. Joseph	Wheatfield Lodge, Headingley.
Nicholson, Mrs. W. B.	The Mount Villas, Burley, Leeds.
Nield, Mrs.	Old Manor House, Headingley.
Nield, Miss E.	Do. do.
Nussey, Miss	Potternewton Hall.
Nussey, Miss E.	Springville, Shaw Lane.
Nussey, Miss M.	Do.
Passavant, Miss F. J.	29, Virginia Road.
Pepper, Mrs. J. E.	7, Cromer Terrace.
Pickles, Mrs. J. J.	105, Camp Road.
Plummer, Mrs. J. E.	Tannery House, Headingley.
Price, Miss	Hillary Place.
Purser, Miss	Miss Thompson, St. Mark's Villas.
Ramsbotham, Miss	16, Park Place.
Ransome, Mrs. C.	4, De Grey Road.
Raynar, Miss	Moorfield Lodge, Headingley.
Redmayne, Mrs. John	39, Sholebroke Avenue.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Reynolds, Miss E.	Do. do.
Rhodes, Miss	27, Park Square.
Richardson, Mrs.	Cliff Road.
Richardson, Miss Lilly	Do.
Rickards, Miss	Wortley.
Roberts, Miss	Holly Bank, Headingley.
Roberts, Mrs.	14, Woodhouse Square.
Rooke, Miss	Newton Hill, Potternewton.
Ryder, Miss A. E.	Gledhow Hill.

Ryder, Miss E. I.	Gledhow Hill.
Ryder, Miss Louisa	Do.
Ryder, Miss Mary	Do.
Ryder, F. J.	Do.
Sanders, Miss	5, Blenheim Square.
Saville, Miss S. E.	15, Springfield Place.
Scatcherd, Mrs. O.	Morley.
Scattergood, Miss	41, Park Square.
Simpson, Mrs.	Belle Vue Villa, Chapeltown Rd.
Simpson, Miss H.	Do. do.
Slade, Mrs. R.	14, Springfield Mount.
Slade, R. H.	Do. do.
Smith, Miss Farrar	Hope Villa, Woodhouse Lane.
Spark, Mrs. F. R.	29, Hyde Terrace.
Spark, Miss	Do.
Stables, Mrs. M.	Hope Villa, Armley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stockdale, Mrs. T.	Spring Lea.
Stroud, Mrs. W.	Ashwood Villas.
Sutcliffe, Miss	Torquay Terrace.
Sutcliffe, Miss K.	Do.
Talbot, Mrs. G.	Southfield, Burley.
Talbot, Miss	Do.
Talbot, Miss L.	Do.
Tatham, Miss	Springfield Mount.
Teale, Miss	North Grange, Headingley.
Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
Tetley, Mrs. C. F.	Cardigan Road, Headingley
Thompson, Mrs. V. T.	195, Belle Vue Road.
Thompson, Miss E.	St. Mark's Villas.
Thornley, Miss M.	Mr. Tetley, Cardigan Road.

Walker, Mrs. A. T.	Bainbrigge Terrace, Headingley.
Walker, Miss E. H.	Newton Park.
Walker, Miss M. H.	Do.
Walker, Miss M. I.	Do.
Walker, Mrs. William	Osmondthorpe Hall.
Walker, Miss	Do.
Walker, Miss Edith M.	Do.
Ward, Mrs. G.	Buckingham Terrace.
Watson, Mrs. Charles	Burton Grange, Far Headingley.
Willans, Mrs.	The Woodlands, Kirkstall.
Willson, Miss Emilie Dorothy	2, Moorland Terrace.
Willson, Miss Margaret	Do.
Wood, Miss	11, St. Mark's Terrace.
Woodhouse, Mrs. E.	The Grange, Armley.
Woodhouse, Miss	Do. do.
Yewdall, Mrs.	56, Wade Lane.
Zossenheim, Mrs. M.	Rose Mount, North Hill Lane.
Zossenheim, Miss B.	Do. do.
Zossenheim, A.	Do. do.

Members and Subscribers are requested to inform the Secretary of any errors that may be found in the above list.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

The Right Rev. A. Barry, D.D., Assistant Bishop of Rochester.

Prof. Graham Bell, The National Telephone Company, Milk St., Boston, Mass., U.S.A.

W. Boyne, F.S.A.

Henry Bowman Brady, LL.D., F.R.S., Devonshire Club, London.

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Joseph Burland, South Cave.

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Dr. Day, Mendoza, Argentine Republic.

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George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

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C. C. Oxley, Minster House, Ripon.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

T. Wemyss Reid, 26, Bramham Gardens, South Kensington, London.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon.

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Henry Seebohm, F.L.S., F.Z.S., 6, Tenterden Street, Hanover Square, London, W.

Col. Edmd. Smyth, Theescombe House, Amberley, Stroud.

John Robert Tennant, Kildwick Hall.

Prof. T. E. Thorpe, Ph.D., F.R.S., Normal School of Science, South Kensington.

Edward Harry Woods, Rosario, Argentine Republic.

The Most Rev. the Lord Archbishop of York, Bishopthorpe.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

PRINTED BY McCORQUODALE & CO. LIMITED, LEEDS.

LEEDS

Philosophical and Literary Society.

THE ANNUAL REPORT

For 1889-90.

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THE

SEVENTIETH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION, 1889-90.

READ AT THE ANNUAL MEETING, MAY 6th, 1890.

Leeds:
PRINTED BY MCCORQUODALE & CO. LIMITED.
1890.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

(1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.

(2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.

(3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.

(4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—

(5.) HONORARY MEMBERS, elected on the recommendation of the Council.

(6.) SUBSCRIBERS of £1 1s. per annum.

(7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares from time to time offered for sale by Members is kept in the office, and information as to price, &c., may be obtained from the Secretary.

IMPORTANT RULES RESPECTING THE PROPERTY OF THE SOCIETY, &c.

In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art, in the town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for that purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

SEVENTIETH SESSION.

THE numbers of Members and Subscribers are as follows:—

	1889.	1890.
Original Proprietary Members (78 shares) ...	70	70
New Proprietary Members (121 shares) ...	94	94
Ordinary Members	2	2
New Ordinary Members	77	77
Annual Subscribers of £1 1s.	178	163
Annual Subscribers of 7s. 6d.	186	168
Total	607	574

Considerable expense has been incurred in renovating the Lecture Hall, and altering and re-cushioning the seats; improvements which have greatly added to the comfort of members and others using the theatre. It is satisfactory that, after paying for these alterations, the cost of which might properly be charged to several years, and in spite of a diminution of revenue from Subscriptions, the debt of the Society is £58 less at the end than it was at the beginning of the financial year. The amount now due to the bank is £168 12s. 3d.

The Lecture Season was one of more than usual interest. The Society is specially indebted to the following noblemen and gentlemen for their valuable lectures which were

delivered gratuitously: The Earl of Carnarvon, Lord Houghton, Prof. L. J. Rogers, Prof. Archibald Barr, Rev. J. H. D. Matthews, and Monsieur du Gillon.

The following is the complete list of the general meetings at which lectures and papers were given :—

1. Address on "Liberty of Speech." The Right Honourable the Earl of Carnarvon, D.C.L. *Oct. 8th*, 1889.
2. "Thomas Wentworth, Earl of Strafford." The Right Honourable Lord Houghton, D.C.L. *Oct. 15th*, 1889.
3. "Quartz Fibres." C. V. Boys, A.R.S.M., F.R.S. *Nov. 5th*, 1889.
4. "Algeria and Morocco." Henry Blackburn. *Nov. 19th*, 1889.
5. "History of Dance Music." Prof. L. J. Rogers, M.A., Mus. Bac. *Dec. 3rd*, 1889.
6. "The use of Colour in the Animal Kingdom, especially illustrated in the case of Insects." E. B. Poulton, M.A., F.R.S. *Dec. 17th*, 1889.
7. "Some Scientific Questions concerning Pictures." Prof. Archibald Barr, B.Sc. *Jan. 7th*, 1890.
8. "The Sicilian Volcanoes." Tempest Anderson, M.D., B.Sc. *Jan. 21st*, 1890.
9. "Browning." Arthur Sidgwick, M.A. *Feb. 4th*, 1890.
10. "Timber, and some of its diseases." Prof. Marshall Ward, M.A., F.R.S. *Feb. 18th*, 1890.
11. "The Proper Functions of Poetry." J. Churton Collins, M.A. *March 4th*, 1890.
12. "The Story of the Bastille and its Capture." H. Morse Stephens, B.A. *March 18th*, 1890.
13. Discussion Evening. Subject: "The best method of teaching a Modern Language." Introduced by Rev. J. H. D. Matthews, M.A., and Monsieur P. H. M. du Gillon. *April 1st*, 1890.

The following lectures were given on Saturday Afternoons to visitors to the Museum :—

"The Life of Mammals," by Edgar R. Waite, on Nov. 16th.

"Green Leaves," by Harold Wager, on Nov. 23rd.

"Contrivance in Nature," by Prof. Miall, on Nov. 30th.

"Flints and Flint Tools," by Rev. Charles Hargrove, M.A., on Dec. 7th.

"Old Leeds," by Edmund Wilson, on Dec. 14th.

The thanks of the Society are due to the above-named gentlemen for their services on those occasions.

The Industrial Museum, the Fish and Reptile Gallery, and the collection of Corals, have been cleaned and re-arranged during the year. An important collection of British Land and Fresh-water Shells, presented by Mr. John W. Taylor, F.L.S., has been placed in the cases. This interesting group which so often engages the attention of young naturalists, has never been adequately represented in our Museum until now. It is proposed to renew the British Marine Shells, and to arrange them in the same manner. The collections of Insects selected for public exhibition have made considerable progress. A number of cases illustrating useful or destructive species have been prepared by Mr. S. L. Mosley, of Huddersfield, and added to the series. Cases of Gall-Insects, Insect-constructions, and Transformations of Insects yet remain to be added. Ten species of living Lepidoptera in various stages of development were exhibited during the summer. In the collection of Birds, a group characteristic of the Palæarctic Region,

which had remained incomplete, has been added to the rest. Forty Birds' Skins have been purchased as a nucleus for a skin collection.

A collection to illustrate sexual and seasonal variation is still required to complete the re-arranged general collection of Birds. An effort will be made to have this and other bits of unfinished work ready for the visit of the British Association in September next.

A collection of Nests of British Birds has been presented by Mr. Edgar R. Waite. The collection at present comprises about thirty examples, and it is hoped to increase this number as occasion offers.

A short general guide to the Museum has been prepared for the use of visitors, and is sold at the price of one penny.

The number of visitors who paid for entrance to the Museum during the year was 27,297; last year the number was 27,006.

On March 3rd, 1890, Sir Edward Baines, who had been for many years the sole survivor of the founders of the Society, passed away in the ripeness of years. At a Special Meeting, the Council adopted the following resolutions:—

"That the Council mourn the removal by death, in his 90th year, of their highly esteemed and venerable friend Sir Edward Baines, D.L., formerly M.P. for Leeds, who was the last surviving founder of the Leeds Philosophical and Literary Society. Sir Edward Baines took part in the meeting held on Dec. 11th, 1818, at which it was decided to organise this Society; he was an active member of its first Council, and retained through life a most cordial interest in its objects and operations."

"That the Council attend the funeral of their late friend on the 6th instant."

The Society has also to regret the death of its Treasurer, Mr. Henry Oxley, J.P., at the age of 86 years.

From the roll of Honorary Members there has been lost the name of Mr. Edward Hailstone, F.S.A., of Walton Hall, who died at the age of 73 years. Mr. Hailstone inherited from his father, not only antiquarian tastes, but important antiquarian collections, and he devoted a lifetime to the cultivation of archæology. The series of books and pamphlets relating to Yorkshire collected by Mr. Hailstone is unrivalled. By the presentation to our Museum of large series of casts from the Great Seals of England, and from the Seals of English Monasteries, &c., as well as by the loan of valuable books for temporary exhibition, Mr. Hailstone gave practical expression to his goodwill towards this Society.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1889.

1889.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in inches.	
			Museum.	Woodhouse Cliff.
January	40·0	29·957	·75	1·04
February	38·0	29·711	1·00	1·22
March	40·4	29·780	2·12	2·42
April	43·7	29·569	2·25	2·71
May	55·2	29·665	2·65	2·99
June	61·3	29·908	·45	·28
July...	60·7	29·755	1·40	1·72
August	58·2	29·649	3·25	3·41
September	54·8	29·860	1·18	1·16
October	47·1	29·516	3·40	3·88
November	44·4	30·012	·93	·94
December	39·0	29·949	1·61	1·79

The mean monthly temperature was 48·6.

The mean monthly height of the barometer was 29·778 inches.

The total rainfall for the year was—Museum 20·99 inches and Woodhouse Cliff 23·56 inches. The average rainfall at the Museum for the ten years 1880-1889 is 25·45 inches.

The greatest degree of heat, as indicated by the thermometer in the shade was 81° on June 2nd and 6th; and the minimum 20° on March 4th.

The greatest barometric pressure was 30·572 inches on December 5th, the temperature of the mercury being 50°; the least pressure was 28·684 inches on March 20th, the temperature of the mercury being 53°.

The greatest fall of rain (during 24 hours) was ·85 inches on May 25th.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

SUNSHINE AT LEEDS IN 1889.

The observations were made by Jordan's Photographic Sunshine Recorder, at the following stations:—

1. The Museum, situate in the centre of the town; elevation above the sea, 137 feet.
2. Woodhouse Cliff, 1½ miles N.W. from the centre of the town; elevation, 330 feet; residential suburb. Mr. Richard Reynolds.
3. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the town; elevation, 475 feet; on the fringe of the borough. Mr. C. S. Irvine.
4. Union Infirmary, Burmantofts, 1 mile from the centre of the town; elevation, 200 feet; industrial district. Dr. Allan.

Months.	Stations.	Hours of sunshine registered.	Percentage of possible duration.
JANUARY	1	6·4	2·4
	2	15·0	5·8
	3	29·8	11·5
	4	11·2	4·3
FEBRUARY	1	37·7	13·6
	2	56·4	20·3
	3	76·3	27·5
	4	56·6	20·4
MARCH..	1	58·0	15·8
	2	86·3	23·5
	3	100·4	27·4
	4	74·3	20·3
APRIL	1	63·2	15·3
	2	77·6	18·8
	3	79·4	19·2
	4	60·7	16·8
MAY	1	90·1	18·7
	2	114·5	23·8
	3	132·9	27·6
	4	131·1	27·2
JUNE	1	165·8	33·5
	2	189·4	38·3
	3	212·3	42·9
	4	214·0	43·3
JULY	1	113·4	22·8
	2	132·7	26·7
	3	150·7	30·3
	4	144·4	29·0
AUGUST	1	76·1	16·9
	2	102·0	22·7
	3	106·7	23·8
	4	99·4	22·1
SEPTEMBER	1	73·8	19·6
	2	97·5	25·9
	3	113·6	30·1
	4	93·1	24·7
OCTOBER	1	20·0	6·1
	2	45·3	13·8
	3	49·0	14·9
	4	38·2	11·6
NOVEMBER	1	20·3	7·7
	2	35·8	13·5
	3	51·6	19·5
	4	31·5	11·9
DECEMBER	1	2·7	1·1
	2	12·7	5·2
	3	24·1	9·9
	4	6·2	2·6

SUMMARY FOR THE YEAR.

Museum	16·3	per cent. of possible duration.
Woodhouse Cliff ..	21·7	" " "
Lawnswood	23·1	" " "
Burmantofts	21·8	" " "
	20·7	per cent. mean.

The Meteorological Office publishes the following records of Sunshine in 1889, as observed at stations taken as representing specified districts:—

	Percentage of possible duration.
Scotland, N. (Stornoway)	22
" E. (Aberdeen, Braemar, Marchmont)	28
" W. (Glasgow, Douglas, Isle of Man)	29
England, N.E. (Durham, York)	26
" N.W. (Penrith, Stonyhurst, Blackpool, Llandudno)	28
" Mid. (Bawtry, Leicester, Oxford, &c.)	28
" S. (London, Hastings, Southampton, &c.)	30
" E. (Hillington, Geldestone, Ingatestone)	30
" S.W. (Pembroke, Falmouth, Plymouth, &c.)	34
Ireland, N. (Armagh, Markree Castle)	25
" S. (Dublin, Parsonstown, Valencia)	31
Channel Islands (Jersey)	40

SUMMARY.

29·2 per cent. mean for United Kingdom.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

Statement of Receipts and Payments for the Year 1889-90.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1st, 1889		—		1	19	3
,, Annual Subscriptions, viz. :—						
83 New Proprietary Members, at 21s. ...	87	3	0			
3 Original Ordinary do. 42s. ...	6	6	0			
67 New Ordinary do. 21s. ...	70	7	0			
145 Annual Subscribers, at 21s. ...	152	5	0			
17 New Annual Subscribers, at 21s. ...	17	17	0			
152 Annual Subscribers, at 7s. 6d. ...	57	0	0			
17 New do. at 7s. 6d. ...	6	7	6			
,, Arrears	2	2	0			
				399	7	6
,, Rent, viz. :—						
Cellars	30	0	0			
Lecture Room	267	16	6			
				297	16	6
,, Receipts from Visitors to Museum		...		113	14	9
,, Sale of Guides	2	5	10			
,, Sundries	2	7	3			
				4	13	1
,, Sale of Forfeited Share		...		5	0	0
,, Balance Due to Bank...		...		168	12	3
				£991	3	4

PAYMENTS.	£	s.	d.	£	s.	d.
By Balance Due to Bank, May 1st, 1889 ...		—		226	15	11
,, Repairs and Alterations	146	13	9			
,, Rates and Taxes	4	11	7			
,, Fire Insurance...	13	15	0			
,, Coals, &c.	24	11	4			
,, Gas	20	2	11			
,, Cleaning	8	8	8			
				218	3	3
,, Salaries...	303	1	8			
,, Fee to Auditor...	2	2	0			
				305	3	8
,, Collections, viz. :—						
Geological	3	10	0			
Zoological	26	4	9			
Library	22	9	3			
Scientific Apparatus	2	1	0			
				54	5	0
,, Postages	7	12	1			
,, Advertising and Printing	40	19	0			
,, Lectures	89	4	0			
,, Interest and Bank Commission	17	13	0			
,, Sundries	13	14	11			
				169	3	0
,, Furniture	3	19	5			
,, Electric Lighting	13	4	6			
				17	3	11
,, Balance in Hand		...		0	8	7
				£991	3	4

I have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

May 28th, 1890.

CHAS. BEEVERS,
CHARTERED ACCOUNTANT.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY.

1889-90.

ZOOLOGY.

Canadian Pouched Rat	Mr. Chas. Ryder, Gledhow.
Richardson's Skua	Mr. T. B. Charlesworth, Settle.
Red-throated Diver	Mr. J. E. Mason, Alford, Lincolnshire.
Small Collection of British Birds' Nests	Mr. Edgar R. Waite.
A few Indian Snakes	Mr. Jas. Moorhouse, Leeds.
Three Turtles' Eggs	Mr. Sidney Atkinson, Leeds.
A Collection of British Land and Freshwater Shells	Mr. John W. Taylor.

BOTANY.

Florida Moss	Mr. Robt. Duncan, Leeds.

ARCHÆOLOGY AND ETHNOLOGY.

Leeds Halfpenny, issued by Rd. Paley	Mr. F. M. Lupton, Leeds.
Various Implements and Articles of Dress, &c., from Demerara	Mr. G. C. Collins, British Guiana.
Tinder Box	Mr. Samuel Falshaw, Headingley.
Model of Singapore Vessel	Mr. T. S. Kennedy, Wetherby.
Two "Longbeard" Jars, found at Plymouth Dockyard	Mr. E. A. Leather, Belford, Northumberland.

PALÆONTOLOGY.

Specimens of Sigilaria and Stigmaria from Wortley	Mr. W. D. Cliff, Burmantofts.

PUBLICATIONS.

Catalogue of Fossil Reptilia and Amphibia, Parts II. and III. ..... Catalogue of Additions to the Manuscripts, 1882-7..... ..... Illustrations of Lepidoptera Heterocera in the British Museum, Part VII. ..... Guide to the Mineral Gallery	British Museum.
British Fossil Vertebrates, by A. S. Woodward, F. G. S., and C. D. Sherborn, F.G.S.	Purchased.
"Locusts in Yorkshire," by W. D. Roebuck, F.L.S.....	The Author.
Catalogue of Chinese Imperial Maritime Customs..... Collection at the International Exhibition of Philadelphia, 1876	The Inspector-General of Shanghai.
On Fossil Plants from the Mackenzie and Bow Rivers ..... On Fossil Sponges of the Lower St. Lawrence	The Royal Society of Canada.
On the Spinose Rhynchonella found in England, by S. S. Buckman, F.G.S., and J. F. Walker, M.A., F.G.S. ... Communications of John F. Walker, M.A., F.G.S.	The Authors.
The Tertiary Flora of Australia	Department of Mines Geological Survey of N.S.W.
Contributions to Canadian Palæontology, Vol I., Part II.	Geological and Natural History Survey of Canada.

On New Plants from the Erian and Carboniferous, and on the characters and affinities of Palæozoic Gymnosperms by Sir J. W. Dawson, LL.D., F.R.S., &c.	The Author.
The English Sparrow in America ... North American Fauna, No. I. and II.	U. S. Department of Agriculture.
On the Pleistocene Flora of Canada, by Sir Wm. Dawson, F.G.S., and Prof. Penhallow, F.R.S.C.	The Authors.

PERIODICALS.

WEEKLY.

Nature	Purchased.

MONTHLY.

Annals and Magazine of Natural History ..... Geological Magazine	Purchased.
Journal of the Chemical Society	The Society.
Monthly Notices of the Royal Astronomical Society	The Society.
Atti della R. Accademia dei Lincei...	The Academy.
Philosophical Magazine and Journal of Science	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society.....	The Society.
Proceedings of the Zoological Society	The Society.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	The Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.

Journal of the Royal Historical and Archæological Association of Ireland	The Association.
Journal of the Anthropological Institute	The Institute.
Zeitschrift für Wissenchaftliche Zoologie.....	Purchased.

ANNUALLY AND OCCASIONALLY.

Philosophical Transactions	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Society of Edinburgh, Vol. XIV., 1886-7	The Society.
Transactions do. do.	
Proceedings of the Royal Institution of Great Britain, Vol. XII., 1887-9	The Institution.
Transactions of the Royal Irish Academy, Vol. XXIX., Parts XI. and XII., 1889	The Academy.
Proceedings do. do. Vol. I., No. II.	
Scientific Proceedings of the Royal Dublin Society, Vol. VI., Parts V. and VI.	The Society.
Scientific Transactions do. Vol. IV., Part V.	
Kongliga Svenska Vetenskaps Akademiens Handlingar Band, XX. und XXI.	Royal Swedish Academy of Sciences.
Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar Band, XLI.—V.....	
Bihang till Kongliga Vetenskaps Akademiens Handlingar Band, IX.—XIII.	
Kritisk Förteckning öfver De I Riksmuseum Befintiga Salmonider	
Lefnadsteckningar over Kongliga Svenska Vetenskaps Akademiens Band II.	

Papers of the Royal University of Norway	The University.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger, Heft I. und II., 1889	Royal Danish Society of Sciences.
Papers and Proceedings of the Royal Society of Tasmania, 1888	The Society.
Proceedings and Transactions of the Royal Society of Canada, Vol. VI., 1888	The Society.
Proceedings of the Royal Society of Queensland, 1889	The Society.
Annual Report of the Royal Cornwall Polytechnic Society, 1888.....	The Society.
Journal and Annual Report of the Royal Institution of Cornwall, Vol. IX., Part IV.	The Institution.
Bulletin Société Impériale, Moscow...	The Society.
British Association Report, 1888.....	The Association.
Australasian Association Report, Vol. I., 1887.....	The Association.
Report of the Smithsonian Institution Smithsonian Miscellaneous Collections	The Institution.
Transactions of the Academy of Science of St. Louis	The Academy.
Transactions and Proceedings of the New Zealand Institute, Vol. XXI.	The Institute.
Annual Report, Middlesex Hospital, 1888	The Hospital.
Annual Report of the Trustees of the Cooper Union for the Advancement of Science (39th).....	The Union.
Victorian Year-Book, 1888-9. By Henry Heylyn Hayter, C.M.G. ...	The Author.
Bulletin of the Essex Institute, U.S.A., Vols. XX. and XXI.	The Institute.

Proceedings of the Birmingham Philosophical Society	The Society.
Annual Report of the Yorkshire Philosophical Society, 1889.....	The Society.
Proceedings of the Glasgow Philosophical Society, Vol. XX., 1888-9	The Society.
Transactions of the American Philosophical Society, Vol. XVI., Part II. Proceedings do. Vol. XXVI., 1889	The Society.
Report of the Halifax Literary and Philosophical Society (58th).....	The Society.
Transactions of the Leicester Literary and Philosophical Society, Vol. II., Part I.	The Society.
Annual Report of the Birkenhead Literary and Scientific Society 1888-9	The Society.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society, 4th Series, Vol. II.	The Society.
Proceedings of the Liverpool Literary and Philosophical Society.....	The Society.
Annual Report of the Sheffield Philosophical and Literary Society	The Society.
Report of the President of Yale University, 1890.....	The University.
Proceedings of the Canadian Institute, Vols. VI. and VII. ..... Annual Report do. 1888-9	The Institute.
Proceedings and Transactions of the Nova Scotian Institute of Natural Science, 1888-9	The Institute.
Proceedings of the Academy of Natural Sciences of Philadelphia, 1889, Parts I. and II.....	The Academy.
Proceedings of the American Academy of Arts and Sciences, 1888, Parts I. and II.	The Academy.

Memoirs of the National Academy of Sciences, Washington, Vol. IV., Part I.	The Academy.
Proceedings of the Davenport Academy of Natural Science, Vol. V., Part I.	The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia, Vol. II.	The Institute.
Annual Report of the Historical and Scientific Society of Manitoba ...	The Society.
Memoires de la Société d'émulation d'Abbeville	The Society.
Journal and Proceedings of the Royal Society of New South Wales, Vol. XXIII., Part I., 1889.....	The Society.
Journal of the Elisha Mitchell Scientific Society	The Society.
Greenwich Observations and Appendix, 1887	The Astronomer-Royal.
Transactions of the Astronomical Observatory of Yale University, Vol. I., Part II. ..... Report do. 1888-9	The University.
Memoirs of the Royal Astronomical Society, Vol. XLIX., Part I.....	The Society.
Annuario del Observations Astronomico Nacional, Mexico, 1889-90	The Astronomer.
Annals of the Cape Observatory.....	Cape Astronomer-Royal.
Radcliffe Astronomical and Meteorological Observations for 1885.....	Radcliffe Trustees.
Symons's British Rainfall, 1888.....	Purchased.
Monographs of the Palæontographical Society.....	Purchased.
Proceedings of the Geologists' Association, Vol. XI.....	The Association.
Journal of the Royal Geological Society of Ireland.....	The Society.

Proceedings of the Liverpool Geological Association, Vol. VIII.....	The Association.
Transactions of the Manchester Geological Society, Vol. XX., 1889-90	The Society.
Transactions of the Leeds Geological Association, Part IV.....	The Association.
Records of the Geological Survey of N.S.W., Vol. I., Part II.	The Surveyor.
Annual Report and Papers of the Department of Mines, N.S.W.	The Department.
United States Geological Survey, 7th Annual Report, 1885-6	The Department.
Geological and Natural History Survey of Canada ..... Annual Report and Papers do., 1887-8	Department of the Interior.
Geological Record for 1889	Purchased.
Transactions and Proceedings of the Royal Geographical Society of Australasia (N.S.W. Branch), Vols. III. and IV. ..... Do. 1st Report on New Guinea	The Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1888-9	The Club.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, Vol. VIII., Part III., 1889.....	The Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club, for 1888	The Club.
Proceedings of the Boston Society of Natural History, U. S. A., Vol. XXIV., Parts I. and II..... Memoirs do.	The Society.
Bulletin of United States National Museum, Nos. 33 to 37 ..... Proceedings do. Vols. X. and XI.	The Museum.

Records of the Australian Museum, Vol. I., 1890	The Museum.
Prodromus of the Zoology of Victoria, Decade 19, 1889.....	The Editor.
Publications of the Ray Society	Purchased.
Annual Report of the Curator of the Museum of Harvard College, 1888-9	The College.
Annual Report of Harvard College, 1888-9	The College.
Mittheilungen der Kais. Königl. Geographischen Gesellschaft in Wien, 1889.....	The Society.
Report of Associated Architectural Societies, Vol. XIX., Part II., 1888	The Society.
Bollettino delle Publicationi Italiane, 1889-90	The Compiler.

LIST OF OFFICERS AND COUNCIL,

1890-91.

OFFICERS.

PRESIDENT	T. PRIDGIN TEALE, M.A., F.R.S.
VICE-PRESIDENTS . .	THOMAS MARSHALL, M.A. REV. J. H. D. MATTHEWS, M.A.
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TREASURER	JAMES W. OXLEY.
HONORARY CURATOR IN GEOLOGY	T. PRIDGIN TEALE, M.A., F.R.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. J. A. NUNNELEY, M.B.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	REV. CHAS. HARGROVE, M.A.

The above officers, with the following gentlemen, form the

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A. G. LEGARD, M.A.	J. J. WILLSON
CHARLES PEBODY.	EDMUND WILSON.

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LIST OF MEMBERS AND SUBSCRIBERS,

1890-91.

* *Members deceased, whose shares have not been transferred*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Farnley.
4	Arthington, Robert	Headingley.
5	*Baines, Sir Edward	
63	Barr, Frederick Horatio	North Grange Road, Headingley.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, John	Birstal.
22, 24	Beckett, W., M.P. (2 shares)	Nun-Appleton, York.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	5, Park Place.
45	Braithwaite, James, M.D.	Clarendon Road.
9	Broadhead, Wm. Henry	22, Sholebroke Avenue.
11	*Brown, James	
31, 62	Brown, S. J. (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmd. (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Mrs.	9, Cavendish Road.
19	Close, James William	32, Park Row.
21	Cudworth, John W.	43, Mount Preston.
23	Dibb, Mrs. Elizabeth	
25	Eddison, John Edwin, M.D.	6, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29, 48	Ford, J. R. (2 shares)	Quarry Dene, Weetwood.
46	*George, Thos. Willington	

33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Very Rev. John, D.D. (2 shares) .	The Deanery, Worcester.
36-8	Gott, Wm. Henry (3 shares)	Armley House.
61	Greenhow, Wm. T. .	Newton Cottage, Chapel-Allerton.
44	Greenwood, Arthur .	8, Cavendish Road.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
64	Harding, Thomas Walter	Tower Works, Globe Road.
41	Heaps, Charles Denison .	Avenue House, Woodhouse Lane.
40	Heaps, John William .	Park View Villas, Cowper Street.
42	Heaton, Beresford R. .	Claremont, Leeds.
30	Horsfall, J., M.A., F.R.C.S.	Hillary House.
47	Ingham, Constantine .	5, Blenheim Terrace.
49	Jowitt, Mrs. John .	Harehills, Potternewton.
51	Kinnear, Thos. John, M.A.	The Abbey, Malton.
55	Luccock, Mrs. .	Beech Holme, Burley, Leeds.
32	Lupton, Edward Basil .	Moorlands, Headingley.
57	Lupton, Mrs. F. .	Beechwood, Roundhay.
53	Lupton, Francis M., M.A.	Wellington Street.
56	Lupton, Sydney, M.A. .	Grove Cottage, Roundhay.
58	*Makins, Charles .	
77	Marsh, John Jenks .	Cressy House, Woodsley Road.
59	Marshall, Arthur, F.G.S.	13, Belsize Avenue, London, N.W.
65	*Marshall, J. G. .	
60	Marshall, John, M.A. .	Derwent Island, Keswick.
66	Marshall, Reginald Dykes	The Cottage, Keswick.
67	Marshall, V. A. E., B.A.	Monk Coniston, Ambleside.
43	*Nelson, George Hird .	
7	North, John .	North Hill, Roundhay.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	*Shepherd, John .	
10	Streatfeild, Richard James	The Rocks, Uckfield, Sussex.

71	Tatham, George .	Springfield Mount.
52	Taylor, Benjamin .	20, Moorland Road.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	*Teale, Mrs. .	
74	Tottie, Mrs. John William	The Grange, Bedale.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	32, Springfield Mount.
17	Walker, Reginald Thomas	27, Hanover Square.
76	*Ward, William Sykes .	
12	Wilson, Rev. Benjamin .	Christ Church Vicarage, Mirfield.
78	Wilson, Edmund .	Denison Hall.
27	Wood, Robert Henry .	15, Bainbrigge Road, Headingley.
1	Wurtzburg, John Henry .	2, De Grey Road.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

32	Atkinson, Edward, F.L.S.	16, Blenheim Terrace.
113	Bailes, Richard .	Ridge Villa, Meanwood Road.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley, M.A.	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.
15	Bilbrough, Wm. Radford	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Rd.
121	Blackburn, Henry G. .	31, Park Row.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, William .	Grove Mill, Headingley.
10	Bowling, John .	3, Cavendish Road.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, nr. Knaresborough.
5, 6	Brown, G. W. (2 shares) .	Heathfield, Ilkley.
89	Buckton, Joshua .	Meanwood.
1	Burrell, Benjamin A. .	5, Mount Preston.
86	Carter, J. B. .	Elm House, Potternewton.

9	*Chadwick, William .	
14	Conyers, W. H. .	The Hills, Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
104	Crawford, John William .	Newton Lane.
26	Dawson, Oswald .	Caledonian House, Caledonian Rd.
19	Fairbairn, Sir Andrew .	Askham Richard, near York.
118	Flitch, John R. .	Chapel-Allerton.
52	Fraser, Mrs. James B. .	Claremont, Horsforth.
102-3, 106-10, 114-15	Gott, Wm. Henry (P) (9 shares) .	Armley House.
22	Hargrave, Charles .	St. Agnesgate House, Ripon.
23	*Hargrave, James .	
7	Hargrove, Rev. C., M.A.	De Grey Terrace.
16	Harvey, William .	Spring Bank, Headingley.
81	Hatch, S. C. .	Clyde House, Westcombe Park Road, Blackheath, London.
44	Hepper, Mrs. J. H. .	Suffolk Lodge, Harrogate.
51	Hoggard, Alfred .	25, Cavendish Road.
36	Hudson, Henry .	Oakwood, Roundhay.
120	Ingham, Samuel .	Headingley Hall.
96	Jepson, Edward George .	20, Springfield Mount.
39	Jowitt, Robert Benson .	Elmhurst, Harehills, Leeds.
40	Joy, Alfred Lomas .	Weetwood Mount, Leeds.
43	*Kitson, James .	
46	Kitson, J. Hawthorn .	Elmete Hall, Roundhay.
47	Kitson, Sir James, Bart.	Gledhow Hall.
48	Kitson, Mrs. F. W. .	Burley Hill, Leeds.
90	Lawson, Frederick W. .	Woodfield, Wood Lane.
50	Leather, Ernest Arthur .	Middleton Hall, Belford, Northumberland.
53	Lupton, Mrs. Arthur .	Headingley.

95	Lupton, Arthur G. .	Wellington Street.
21	Lupton, Edgar .	Moorlands, Headingley.
8	Lupton, Henry .	Lyndhurst, Headingley.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, William Walter .	The Grove, Roundhay.
63, 99, 100	Lupton, Fras. Martineau, M.A. (P) (3 shares) .	Wellington Street.
62	MacCarthy, Charles D. .	Bank of England, Leeds.
88	McGuire, Thomas .	Grosvenor Villa, Grosvenor Rd.
94	Malcolm, John Cooper .	Brighton Villa, New Leeds.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
72	Marshall, John, F.R.A.S.	Church Institute.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
24	Matthews, Rev. J. H. D.	Grammar School, Leeds.
27	*Maude, Edmund .	
117	Middleton, Arthur .	Hawk Hills, Chapel-Allerton.
66	Nicholson, A. H. .	
30	Nicholson, Marshall .	Middleton Hall, Beeston.
64	Nickols, Richard .	Hill Top, Bramley.
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	*Oxley, Henry .	
28	*Passavant, P. W. .	
82	Pearson, John Thomas .	The Hall, Melmerby, Thirsk.
93	Pebody, Charles .	55, Albion Street.
11	Price, Mrs. William N. .	Hillary Place.
38	*Ralph, John, M.A. .	
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
18	Robson, A.W.M., F.R.C.S.	Hillary Place.
105	Ryder, Charles .	Gledhow Hill.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, John Edward .	Gledhow Wood, Gledhow.

57	Stringer, John William .	Inglebank, Far Headingley.
87	Talbot, Rev. E. S., D.D. .	The Vicarage, Hillary Place.
73	Teale, T. P., M.A., F.R.S.	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
76	*Tennant, Thomas .	
78	*Tetley, F. W.	
58	Thompson, Chas. F. .	34, College Road, Leeds.
49	Thorp, John Hall .	Far Headingley.
79	Turner, Richard B. .	Oakleigh, Buxton.
80	Wailes, William .	2, Albion Place.
71	Ward, John .	Moor-Allerton House.
111	*Watson, William Henry .	
41	Webb, Joseph S. .	26, Park Row.
97	Weston, Edward .	Newton Park Villa, New Leeds.
42	Whiting, John .	Cliff Road.
83	Wicksteed, J.H., M.Inst.C.E.	1, Grosvenor Terrace, Headingley.
31	Wilkinson, William M. .	8, East Parade.
85	Wilson, John .	Seacroft Hall.
17	Wilson, Richard .	Commercial Street.
35	Wood, Philip T. .	22, Lyddon Terrace.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

11	Ramskill, Josiah .	29, Meadow Lane.
13	Stratten, Rev. J. R. .	Park Square.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

13	Abbott, Robert .	13, St. John's Terrace.

2	Baines, Talbot, B.A. .	Albion Street.
3	Barr, Fredk. Horatio (P.)	North Grange Road, Headingley.
4	Barwick, J. M. .	Low Hall, Yeadon.
5	Bedford, James E. .	Cardigan Road.
7	Best, Wm. Woodham, M.A.	31, Lyddon Terrace.
40	Bodington, Prof. N., M.A.	The Yorkshire College.
8	Bolland, W. T. .	Oriel House, Scarborough.
10	Bousfield, Charles Edward	St. Mary's Mount.
15	Bray, George .	Blackman Lane.
11	Briggs, Riley .	Springfield Mount.
75	Brunton, George .	Hillary Mount, Woodhouse Lane.
14	Corson, George .	Wood Lane, Headingley.
41	Crossley Thomas .	Highfield House, Headingley.
35	Croysdale, Joseph .	94, Beeston Road, Leeds.
16	Denny, T. G. .	2, Moor View, Hyde Park.
32	Dixon, A. S. .	Woodlands, Harehills Lane.
65	Eddison, Octavius, B.A. .	St. Helen's, Adel.
20	Eddison, Robert William	The Manor, Adel
22	Fairley, Thomas, F.R.S.E.	8, Newton Grove.
21	Firth, William .	Burley Wood House.
48	*Fraser, Henry John .	
69	Fraser, James B. .	8, Park Square.
24	Gascoigne, F. C. Trench .	Parlington Park, nr. Garforth.
25	Goodman, Prof. John .	The Yorkshire College.
12	Hadow, Reginald .	Bank of England, Leeds.
72	Hardcastle, Mrs. R. A. .	30, Hyde Terrace.
27	*Hargrave, John .	
28	Hepper, John .	Clareville, Headingley.
80	Holmes, Joseph .	Chemical Works, Crown Street.
81	*Holroyd, James .	
30	Holt, H. S. .	Woodville, Roundhay.
31	Illingworth, William .	Flower Bank, Burley, Leeds.
33	Irwell, Arthur F. .	17, New Station Street.

6	Jackson, Richard .	Beech Villa, Cardigan Road.
34	Jackson, Rt. Hon. W. L., M.P. .	Allerton Hall, Leeds.
67	Jefferson, Robert P. .	39, Leopold Street, New Leeds.
63	*Jowitt, Miss E. M. .	
37	*Kemplay, Miss .	
38	Lawson, Thomas .	Newton Hill, Potternewton.
39	*Lawson, John .	
88	Legard, Albert G., M.A..	The Briary, Harrogate.
23	Lupton, Prof. Arnold .	6, De Grey Road.
44	McCheane, Miss .	The Hollies, Headingley.
45	March, George .	Oaklands, Scarcroft.
61	Mason, Charles Letch .	Park Row.
9	Mathers, John Shackleton	Hanover House, Leeds.
46	Middleton, Gilbert .	Calverley Chambers, Victoria Sq.
36	Morley, R. B. .	2, Westfield Terrace, Chapeltown.
49	Myers, W. C. .	Grove House, Roundhay.
50	Nelson, Henry .	St. John's Cottage, Leeds.
70	Nelson, James Henry .	Brook House, Sandal, Wakefield.
58	Nicol, W. H. .	2, Clarendon Road.
51	Nunneley, Thomas .	9, Beech Grove Terrace.
52	Nussey, George Henry .	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah .	Morley House, Headingley.
54	Nussey, Thomas .	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter .	Springville, Shaw Lane.
42	Oxley, James Walker .	28, Commercial Street.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Raynar, John .	Moorfield Lodge, Headingley.
17	Redmayne, John .	39, Sholebroke Avenue, Leeds.
62	Riley, H. W. .	131, Briggate.
73	Rowley, Walter, C.E. .	Alder Hill, Meanwood.
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